The Cotton Gin and Oil Mill

PRESS

MARCH 21, 1959

60th Year

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES

A PROGRESSIVE AND RESPONSIBLE PUBLICATION

EUGENE B POWER
UNIV MICROFILMS
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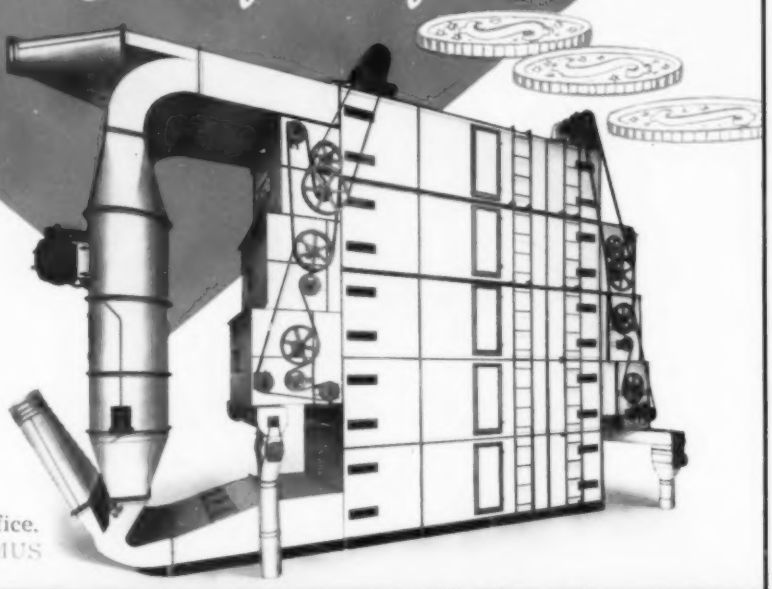
The Super Volume COTTON CONDITIONER

Prepares Cotton for Profit!



- $ Is your drying cost getting out of hand?
- $ Are you worried about fiber damage due to excessive heat?
- $ Can you handle wet bales at full capacity?
- $ Can you successfully handle dry bales following wet bales?
- $ Can you cope with your static problem?
- $ Does your drying system require your constant attention?

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LUMMUS COTTON GIN CO. Columbus, Ga. U. S. A. • Dallas • Fresno • Memphis

When you come to the
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be sure to see our new

120-SAW GIN

in operation at our
Dallas Demonstration Plant

For full description, see our advertisement on page 15

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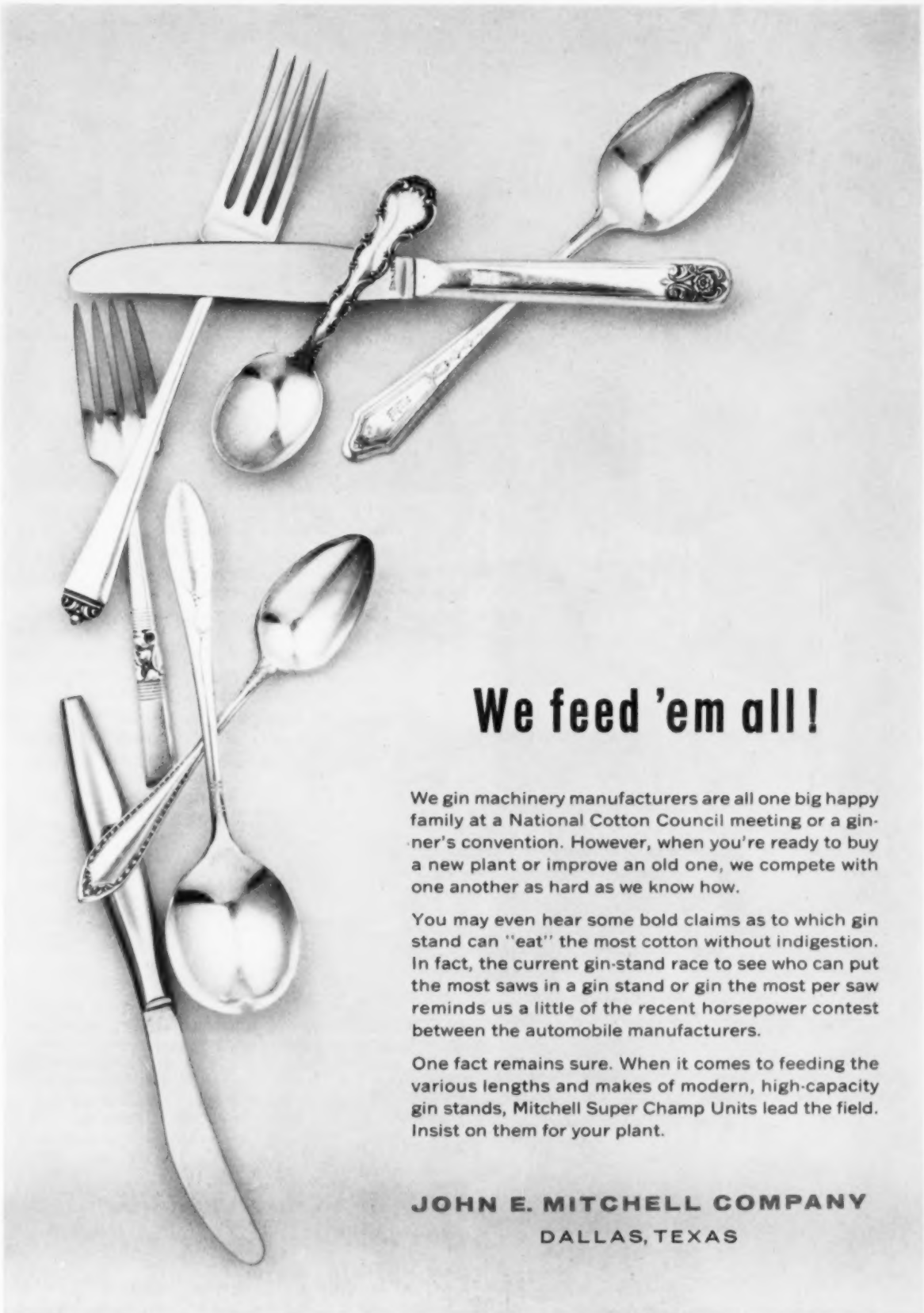

We feed 'em all!

We gin machinery manufacturers are all one big happy family at a National Cotton Council meeting or a ginner's convention. However, when you're ready to buy a new plant or improve an old one, we compete with one another as hard as we know how.

You may even hear some bold claims as to which gin stand can "eat" the most cotton without indigestion. In fact, the current gin-stand race to see who can put the most saws in a gin stand or gin the most per saw reminds us a little of the recent horsepower contest between the automobile manufacturers.

One fact remains sure. When it comes to feeding the various lengths and makes of modern, high-capacity gin stands, Mitchell Super Champ Units lead the field. Insist on them for your plant.

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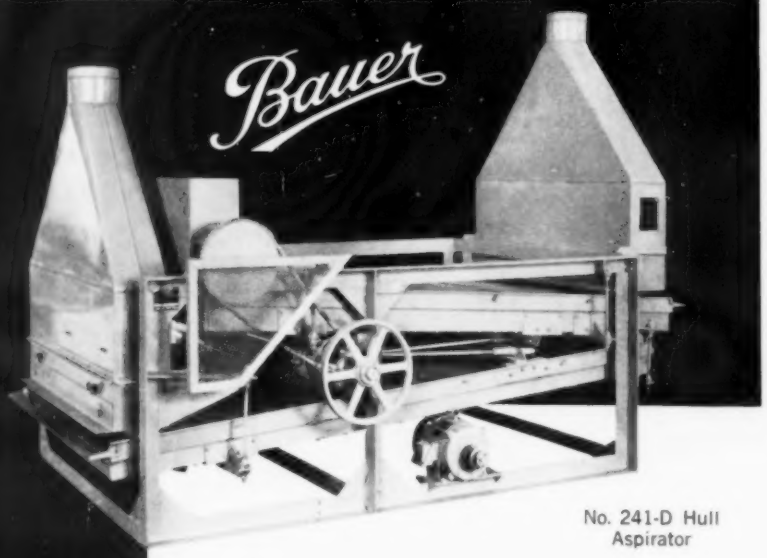
DALLAS, TEXAS

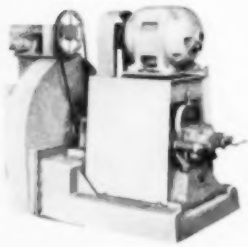


No. 241-D Hull Aspirator

SOYBEAN HULL REMOVAL

- Double classification and aspiration
- Built-in, self-cleaning ball cage sash
- Action of reciprocating deck brings hulls to the surface for more efficient aspiration
- Specially designed for companies wishing to produce **50%** protein meal

SOYBEAN PRE-CRACKING



Single revolving disc attrition mill

- Engineered to effectively pre-crack and loosen hulls
- Increases life of cracking rolls
- Increases efficiency of separating equipment

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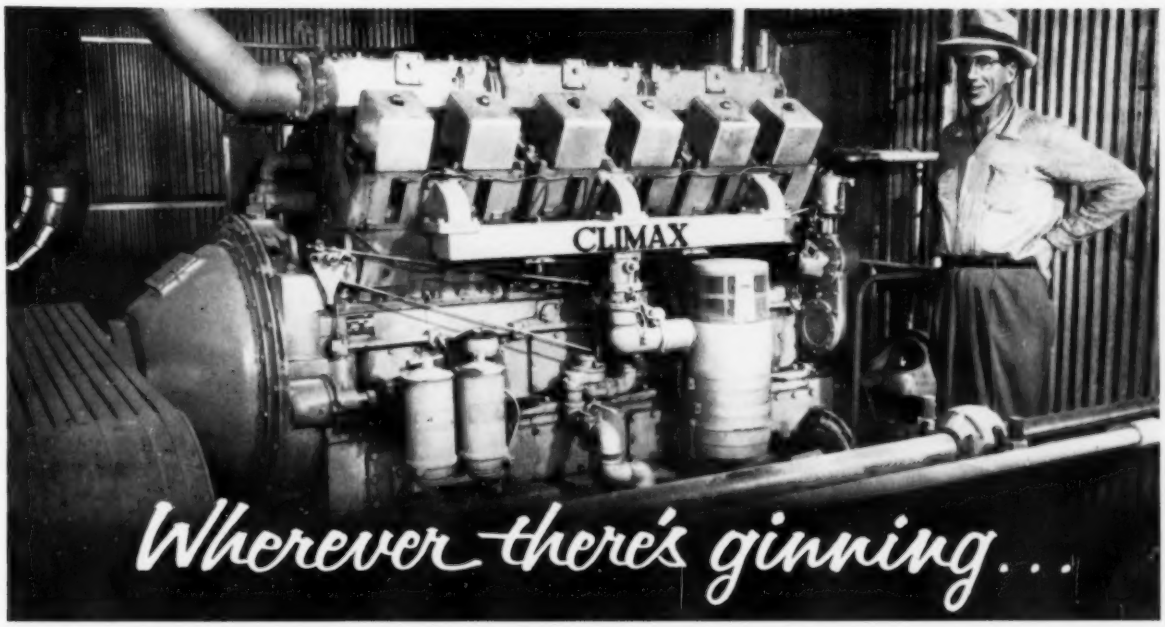

Lubbock County, Texas

CLIMAX Cotton Gin ENGINES

Designed and made especially for the modern gin and today's accessories—Climax Cotton Gin Engines put out all the power you need for ginning—and extra power when needed for emergency overloads. With this Climax dependability is combined ease of operation and quick accessibility. Their in-built fuel economy and low upkeep features assure the lowest cost per bale. Send for Bulletins.

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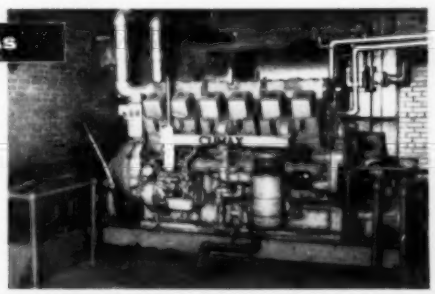
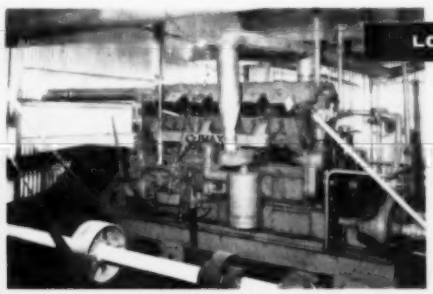
Natural Gas Fuel			Brake HP at Speeds Shown			
Model	Bore & S.	Displ.	700	800	900	1050
K-67	7 x 7	1616	132	151	168	192
K-75	7½ x 7	1855	150	170	192	220
V-80	7 x 7	2155	170	194	218	250
V-85	7½ x 7	2474	198	228	254	285
V-122	7 x 7	3232	264	304	334	380
V-125	7½ x 7	3711	296	345	392	444

ARKANSAS

South Central Mississippi County



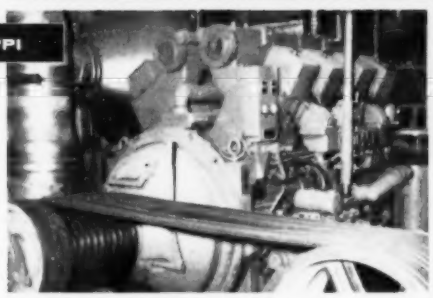


LOUISIANA

North Central Caddo County

MISSISSIPPI

North Eastern Grenada County



TEXAS

South Western Hidalgo County

CL-103

CLIMAX ENGINE MANUFACTURING CO. • DIVISION OF WAUKESHA MOTOR COMPANY

FACTORY—CLINTON, IOWA

VOL. 60 MARCH 21, 1959 NO. 6

THE COTTON GIN AND OIL MILL PRESS

THE COTTON GIN AND OIL MILL PRESS...
READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

* * *

OFFICIAL MAGAZINE OF:
NATIONAL COTTONSEED PRODUCTS ASSOCIATION
NATIONAL COTTON GINNERS' ASSOCIATION
ALABAMA COTTON GINNERS' ASSOCIATION
ARIZONA GINNERS' ASSOCIATION
ARKANSAS-MISSOURI GINNERS' ASSOCIATION
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TEXAS COTTON GINNERS' ASSOCIATION

*

THE COTTON GIN AND OIL MILL PRESS is the Official Magazine of the foregoing associations for official communications and news releases, but the associations are in no way responsible for the editorial expressions or policies contained herein.

WALTER B. MOORE
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HELEN TROY
Editorial Assistant

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* * *

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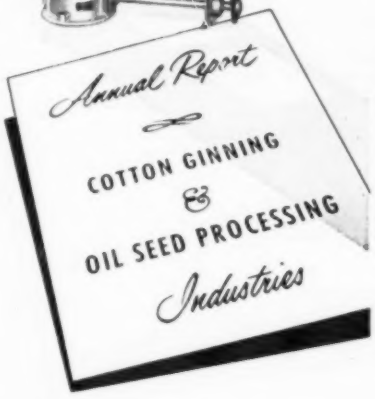
3116 COMMERCE STREET, DALLAS 26, TEXAS

Trailers loaded with cotton waiting at a California gin are shown in our cover picture. This scene is especially appropriate to suggest the contents of this issue, which includes the papers presented at the Western Cotton Production Conference in Phoenix, a report on the Midsouth Gin Supply Exhibit and annual meetings of the Arkansas-Missouri and Tennessee Cotton Ginners' Associations, and plans for the Texas Cotton Ginners' Association annual meeting.

Photo Courtesy S. A. Camp Co.

you won't find **Rotor Lift** mentioned

. . . in the profit and loss statements of the cotton ginning and oilseed processing industries. Wherever elevating is a factor in profitable plant operations, Rotor Lift's efficiency and low maintenance costs help to limit expenses that eat into profit.



8 Eight basic designs make Rotor Lift adaptable to any elevating needs in the industry. Send for catalog or literature, with complete engineering data on horsepowers, capacities and operating speeds.

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OVER 31,000 BALES

Four 120-SAWS in Action

FIELD PROVEN THROUGH THE 1958 GINNING SEASON

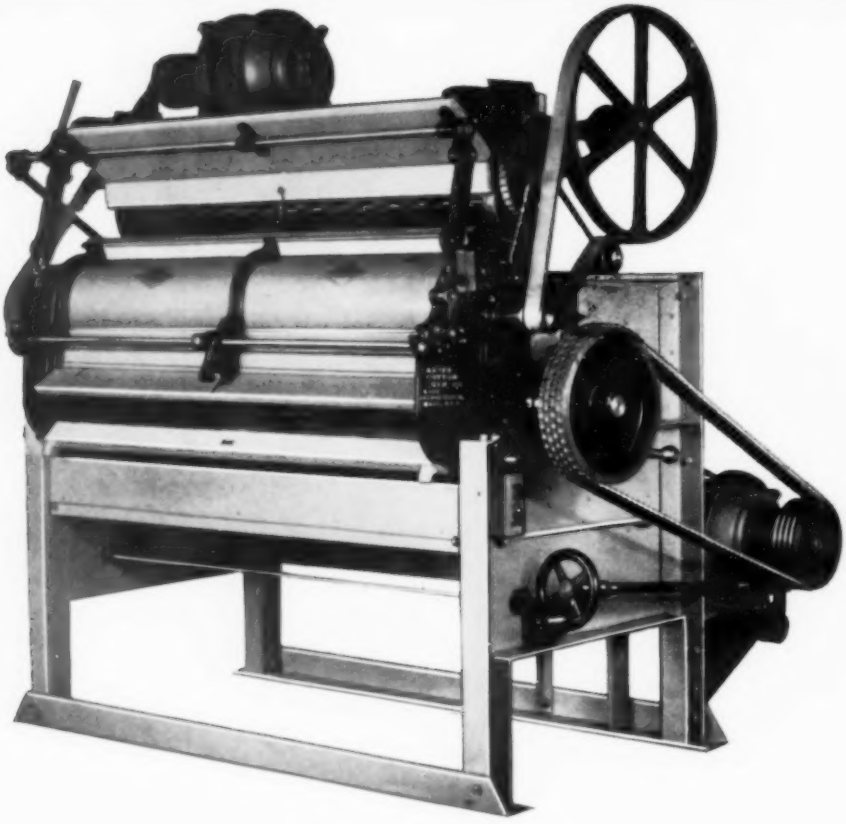
The Murray Company of Texas, Inc. had five batteries of 120-Saw Safety Gins in complete outfits similar to the one pictured above, in the field throughout the entire 1958 ginning season.

. . . Plants located at Laton and Five Points, California . . . Eloy, Arizona . . . Walls, Mississippi . . . and New Home, Texas. These complete plants were in operation a full season, ginning approximately three bales per gin stand per hour, proving this average capacity under actual field conditions, handling all types of cotton from early harvesting until season's close.

This is proven performance in complete batteries — not theoretical performance based on laboratory capacity of one Gin Stand.

. . . from MURRAY, a name that stands for over a half century of dependability and reliability . . .

MURRAY M SINCE 1900



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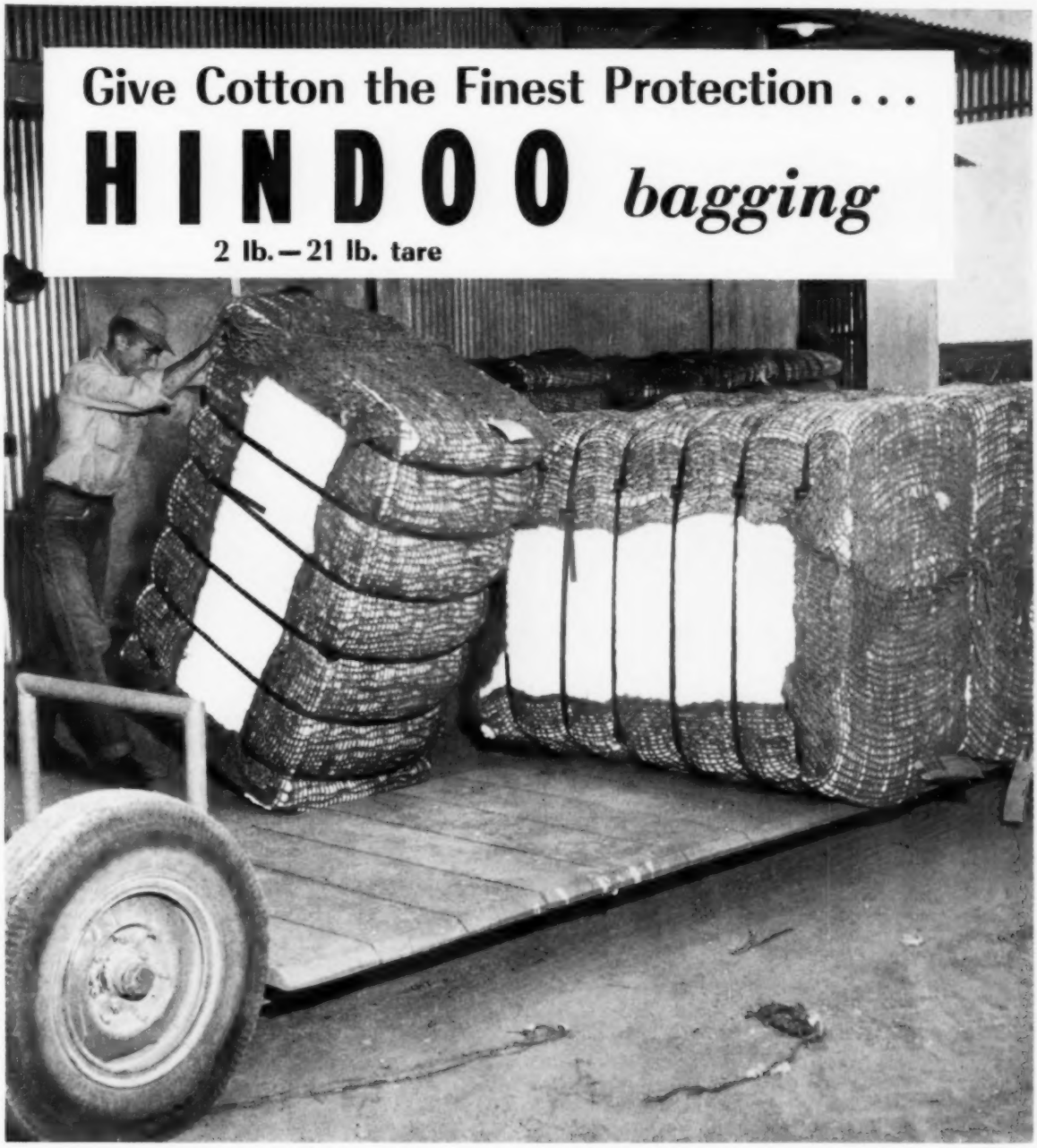

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Ginners who demand the BEST

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SUPER **88** SAW GIN

has ginned twice the capacity of conventional 90 saw gins under field conditions throughout the cotton belt.

The first basicly new development in gin stand design in over 20 years.

The only gin with a power driven — friction free seed roll.

A product of Research—not multiplication!

super 88

LUMMUS COTTON GIN CO.

COLUMBUS, GEORGIA

MEMPHIS • DALLAS • FRESNO

"Always Look for Something Better"

AN EARLY GIN which Aubrey Lockett rebuilt when his first gin burned in 1924.

AUBREY LOCKETT, top, Mrs. Lockett, their daughter, Linda, and a friend, vacationing in New Mexico.

Aubrey L. Lockett

By WALTER B. MOORE
Editor

AUBREY LOCKETT is one of cotton's outstanding leaders. Jewell—that's his wife—knew he would be successful when she was a little girl. She and Aubrey have been sweethearts since she was a high school freshman; and Jewell's always had faith in Aubrey.

But even Jewell had her doubts about Aubrey's future on a couple of occasions.

Three months after they married, Jewell saw Aubrey stumble out of the cotton house of their burning gin, blinded by the smoke. She doubted that he would be able to see, or ever rebuild the gin.

When times were so tough in 1934, Jewell stood in West Texas' worst dust storm and tried to see some hope for the drouth-stricken 6,400 acres for which she and Aubrey had practically signed away their lives.

Jewell wondered if the farm would ever pay. She doubted that it would ever rain. The farm manager said water had flooded up to the headquarters windmill in the past. Jewell bet a Stetson this would never happen again. Within a year she received a telegram: "Send Stetson; lake water's at the windmill."

Aubrey's ability and Jewell's faith in him, even when the going was so rough, are a classic American story of the hometown boy and girl who made good.

The story began before Aubrey or Jewell were born, for their families were friends then. Aubrey's family lived at Lockett, a few miles from the Nowlin Ranch near Vernon, Texas. But by the time the children were in high school, Aubrey admits that he was spending about about as much time on the Nowlin front porch as he was at home in the community which his grandfather founded.

• **Built Ginning and Seed Firms**—Times got bad just after World War I and, after going to business college, Aubrey came back home and bought a gin. He also operated a custom threshing business, which is far from easy work. And, he was courting Jewell. His version is that it took seven years to persuade her to marry him; she says it took Aubrey that long to get up nerve enough to ask her!

But, whatever the true story, they were married on May 28, 1924. Things looked mighty bad when the gin burned three

THE LOCKETTS—Aubrey, Linda and Mrs. Lockett on the left. On the right, Aubrey participates in a national radio broadcast during a Cotton Mechanization Conference, sponsored by the Cotton Council.

months later, right at the start of a new ginning season. Aubrey, however, has never been one to let a temporary handicap stop him. (In fact, he probably would not have mentioned the fire if Jewell hadn't.)

How Aubrey meets problems is indicated by an Acco Press article. This said: "He completely rebuilt his power plant; bought, installed and housed a 4-80 gin outfit; and got his organization underway in 18 days following the ruinous fire. In spite of this untimely handicap, he ended the 1924-25 season with a ginning total of 3,855 bales."

He has kept on developing his ginning business until he now has four gins, with modern equipment. For example, when we visited the gin south of Lubbock, they were using one of the first new automatic samplers.

Two gins are in his home county, Wilbarger; one is in Foard County; and the fourth is in the Lubbock area, on the Hockley-Terry county line.

Cottonseed breeding was one of his next developments. This began in the early 1930's when he became concerned about his gin customers' planting seed problems. They were changing varieties frequently, often with disappointing results. Lockett saw a need for a dependable, adapted varieties and an opportunity in a business rendering service to farmers. Lockett Seed Co. was the result.

Ginning and cottonseed breeding remain today his greatest interest, although he has other business connections. Among other things, he has been president and now is chairman of the board of The Waggoner National Bank at Vernon.

• **Business Associates Praised** — Service to others ranks much higher with Aubrey and Jewell than business success, and the time that they have devoted to public service is impressive. Characteristically, Aubrey insisted that his business associates deserve much of the credit for this.

"Their loyalty made it possible for me to give my time to other things," he commented. The long list of those who have been with him for a quarter-century or more certainly suggests loyalty—both on their part and on his. Among these coworkers in Lockett businesses are:

J. H. (Skeet) Roberson, who heads the farming and ginning operations at Lockettville, out on the High Plains. He started with a threshing crew in 1920, and teases Jewell by saying, "I've been with Aubrey longer than Jewell."

B. T. Juvenal, who is in charge of the company's planting seed breeding work and cotton sales.

Lee Roberson, who is the local manager of operations at Vernon.

Clois Cato, who is in charge of the West Texas branch of the planting seed operations.

Roy Martin, who is head of the Rayland Gin Co. operations in Foard County.

• **Leader in Cotton Activities** — Their efficiency frees Aubrey for other activities, and even an incomplete list of these shows clearly why he ranks so high in the esteem of his fellow citizens in Wilbarger County, West Texas and the cotton industry:

NATIONAL COTTON COUNCIL — He was one of the men at the first organizational meeting in Memphis, in 1938, and has always actively supported this industry-wide program to help cotton. He served as a director many years and now is treasurer. Lockett also is chairman of the Texas Unit.

TEXAS COTTON GINNERS' ASSOCIATION —The nation's largest ginners' organization elected him president when he was only 35, and re-elected him the next years. He received the first gold lifetime membership card that the Association ever presented, and he has continued to take an active interest in his capacity as honorary advisory member of the executive committee.

NATIONAL COTTON GINNERS' ASSOCIATION — Lockett also was one of those working with other leaders in the formation of the National Cotton Ginners' Association, more than 20 years ago.

The Cotton and Cottonseed Research and Marketing Advisory Committee of U.S. Department of Agriculture, the State-wide Cotton Committee of Texas, and numerous other organizations related to cotton and its problems have called upon Aubrey Lockett for service.

• **Civic Leader in Vernon** — With equal generosity, he has worked in civic enterprises at Vernon, in Wilbarger County and West Texas. The list includes the Rotary Club, which has now made him a Senior Active Member; the Santa Rosa Roundup and Livestock Association of which he is secretary-treasurer; the Vernon and West Texas Chambers of Commerce; Texas Seed Breeders' Association; the Knife and Fork Club; the Baptist Church; Northwest District Boy Scouts; the Campfire Girls; and many others.

Hill Crest Country Club is another or-

(Continued on Page 71)

THE A B C's OF GOOD BAGGING

TOUGH withstands hard use and rough wear

RUGGED extra strength for cleaner, stronger bales

DURABLE maximum protection from weather.

THESE ARE THE QUALITIES THAT MAKE "PRIDE OF INDIA" THE BEST BAGGING IMPORTED INTO THE U. S. A. TODAY!

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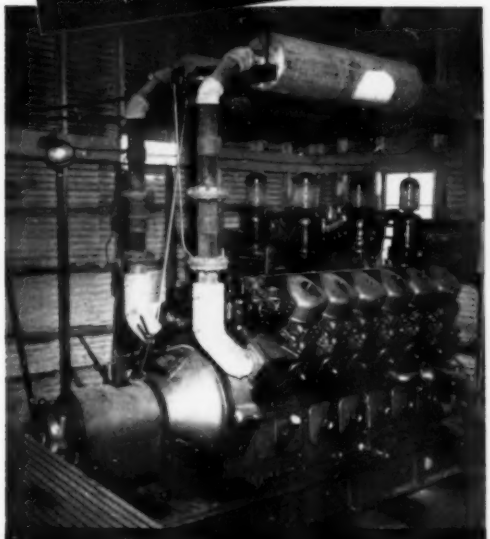
ROILINE Model L-3460 Engine powers ginning equipment of Union Oil Mill & Gin Co., Rayville, Louisiana

ROILINE ENGINES (Formerly LE ROI)

POWER ...for ginning ...in reserve



Model L-3460 ROILINE Cotton Gin Engine—12-cyl. V-type, 7¼ in. bore x 7 in. stroke, 3468 cu. in. displ., counter-balanced crankshaft, operating on natural gas, 595 hp max. at 1350 rpm. Send for Bulletin E-5.

• The Union Oil Mill & Gin Co. gin at Rayville, Louisiana, has 5-stand 80-saw Murrays; a super unit Mitchell seeder with 3-cylinder after-cleaner; one saw cylinder acting as an after cleaner with heat in the feeders, to handle lint; one tower dryer; seed handling equipment and press pumps; nine fans—all powered by a Model L-3460 ROILINE Cotton Gin Engine. They get plenty of power for the job (at 1100 rpm) with plenty to spare. Their average ginning is 5000 bales yearly.

ROILINE has a heavy duty design for durability and dependability in pulling heavy loads. With sensitive governors and quick acceleration, ROILINES meet load changes and still give the continuous operation gin engines must have to handle today's cotton, along with modern accessories. And they burn natural gas-butane-propane fuels cleanly; with the proper compression ratios for low fuel consumption, which cuts fuel cost.

ARIZONA, Casa Grande, Engine Service Company, Inc.
ARKANSAS, Paragould, Wonder State Manufacturing Co.
CALIFORNIA, Long Beach, Engine & Equipment Company
COLORADO, Denver, Emrick & Hill Engine & Equipt. Co.
ILLINOIS, Centralia, John Nickell Company
KANSAS, Garden City, Carson Machine & Supply Co.
LOUISIANA, Shreveport, Ingersoll Corporation
MICHIGAN, Reed City, Hafer Engine Company
OHIO, Columbus 19, Cantwell Machinery Company
OKLAHOMA, Chickasha, Chickasha Gin & Mill Supplies
Oklahoma City 9, Carson Machine & Supply Co.
PENNSYLVANIA, Pittsburgh 34, P. C. McKenzie Company
TEXAS, Houston 1, Southern Engine & Pump Co.
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Golden Anniversary

TEXAS GINNERS TO MEET

Outstanding Program Planned

OUTSTANDING SPEAKERS and many added entertainment features are expected to attract a record attendance at the Golden Anniversary Convention of Texas Cotton Ginners' Association in Dallas, April 5-6-7, according to Peary Wilemon, Maypearl, president.

Secretary of Agriculture Ezra Taft Benson, head of the U.S. Department of Agriculture which determines so many policies influencing cotton production and ginning, will be one of the speakers for the business program. The complete program is outlined on this page.

Dr. Sterling Price, Third Baptist Church, St. Louis, is another featured participant on the program and is widely known as an inspirational speaker.

Walter Hehmeyer, Memphis, sales promotion specialist, National Cotton Council, will present a program of interest to wives and daughters of ginners, as well as to the men. His presentation will follow an all-cotton fashion show brought to Dallas from Texas Technological College, with co-eds from the school acting as models.

• **Exhibits**—Displays of cotton gin machinery and other supplies for ginners will exceed those last year, according to Edward H. Bush, Dallas, executive vice-president of the Texas Ginners' Association and president of the Gin Machinery and Supply Association, Inc., the non-profit organization which handles exhibits and provides all entertainment for ginners and their guests at the Texas meeting.

All exhibits and convention sessions will be at the State Fair of Texas, as in previous years. The detailed program ac-

(Continued on Page 70)

PEARY WILEMON, President

ROBERT HORTON, Vice-President

ED BUSH, Executive Vice-President

JAMES WALSH, Chmn., Executive Committee

PROGRAM

SUNDAY, APRIL 5

9:30 a.m.—Exhibitors' Registration
1:00 p.m.—Ginners' and Visitors' Registration. Exhibits open.
2:00 p.m.—Executive Committee Meeting, Association Offices.
8:00 p.m.—Directors' Banquet, Dallas Athletic Club.

MONDAY, APRIL 6—MORNING

8:00 a.m.—Registration begins. Exhibits open.
8:30 a.m.—Directors' Meeting, French Room, Adolphus Hotel.
10:00 a.m.—Party — Ladies Only — Convention Hall.

MONDAY, APRIL 6—AFTERNOON: STATE FAIR MUSIC HALL

1:45 p.m.—Call to Order—Peary Wilemon, President, presiding.
2:00 p.m.—All Cotton Fashion Show.
2:35 p.m.—"Cotton — The Fashion Fiber" — Walter Hehmeyer, sales promotion specialist, National Cotton Council.
3:10 p.m.—Prizes.

MONDAY, APRIL 6—EVENING ENTERTAINMENT: MIDWAY

7:30 to 10:30 p.m.—Carnival Time on the Midway of the State Fair of Texas for ginners, exhibitors and their guests.

TUESDAY, APRIL 7—MORNING AGRICULTURAL BUILDING

7:30 a.m.—Breakfast for New Executive Committee — Adolphus Hotel.
9:00 a.m.—Entertainment in the Convention Hall.
9:15 a.m.—Call to Order—R. L. Horton, Vice-President, presiding.
9:20 a.m.—Presentation of Awards.
9:40 a.m.—Address—Dr. Sterling Price, Third Baptist Church, St. Louis.
10:10 a.m.—Fun Party (a surprise package of entertainment acts and prize drawings).

TUESDAY, APRIL 7—AFTERNOON: AGRICULTURAL BUILDING

2:00 p.m.—Entertainment in the Convention Hall.
2:35 p.m.—Address—Ezra Taft Benson, Secretary of Agriculture.

TUESDAY, APRIL 7—EVENING ENTERTAINMENT: AGRICULTURAL BUILDING

9:00 p.m.—Annual Dance.

Continental's 120-SAW AUTOMATIC GIN

with 96" Perfection Extractor

Thoroughly field tested during the 1958 ginning season this combination has proven its ability to produce a smooth clean sample at high capacity, with low power consumption. It is so easy to operate as are all Continental Gins and Extractors with automatic feed and roll density control. Both the Gin and Extractor incorporate all the features of Continental's 90-Saw Gin and 69" Perfection Extractor plus a number of improvements and refinements. Both have been engineered to stand the added load imposed by the greatly increased capacity and greater length.

120-SAW GIN — The illustration shows a Brush Gin, however 120-Saw Airblast Gins are also available. Standard center to center distance is 10' - 6" for Direct Connected Gins and 14' - 0" for Independently Driven Gins. In Direct Connected outfits this gives about 7" more room between Gins than with 90-Saw Gins.

96" PERFECTION EXTRACTOR is shown here. Master Double X and Special Perfection Extractors are also made in the 96" size. All three can be furnished with or without stick attachments. Thus a 96" Continental Extractor is available in a size to suit any condition or type of cotton.

The World's Finest —

Continental

- **High Capacity**
- **Two Way Moting**
- **Roll Density Control**
- **Push Button Operation**
- **Loose Seed Roll**
- **Automatic Feed**
- **Smooth Clean Sample**
- **Low Power Consumption**

CONTINENTAL GIN *Company*

BIRMINGHAM, ALABAMA

ATLANTA • DALLAS • HARLINGEN • LUBBOCK • MEMPHIS • PHOENIX • TULARE

In Biloxi, April 6-7

Fleming and Keeton To Address Group

■ VALLEY PROCESSORS announce entertainment and business program for annual meeting.

Robert Keeton and J. D. Fleming will be two of the guest speakers at the annual convention of Valley Oilseed processors' Association, April 6-7 at the Buena Vista Hotel, Biloxi, Miss.

Keeton, who is in the Procter & Gamble Co. Economic Research Department, will discuss the outlook for oilseeds and oilseed products markets.

"Adjusting to a Changing Agriculture" will be the topic for Fleming, executive vice-president of National Cottonseed Products Association.

"Business and Politics" will be the subject of an address by Colonel R. W. Coward, Fly Ash Arrestor Corp., Birmingham, Ala.

Bryan Blalock, industry and public relations director, for the Borden Co., Southern Division, Marshall, Texas, will speak to the group on, "Are We Going Soft?"

Ernest Rice, Jr., Nashville, Tenn., is president of the Valley Association, and will preside at the convention. Zach McClendon, Monticello, Ark., vice-president who is scheduled to assume the presidency, will be toastmaster at the annual banquet on Tuesday evening. C. E. Garner, Memphis, is secretary.

A party for ladies on Monday morning and the annual golf tournament Monday afternoon will be other entertainment features.

Election of officers and directors, other business and the awarding of golf prrizes are scheduled on Tuesday morning, in addition to the address by Keetong and Coward.

ROBERT KEETON, Economic Research Department, Procter & Gamble Co., Cincinnati, will discuss the outlook for oilseeds and products markets.

• Ginners Issue Golden Anniversary Book

THE GOLDEN ANNIVERSARY edition of the Texas Cotton Ginners' Association Journal Yearbook has been distributed. Edward H. Bush, executive vice-president of the Association, is editor.

Timely articles on ginning and related subjects; information about the Association and plans for its Golden Anniversary convention in Dallas, April 5-7; many pictures of leaders in the Association; and advertisements of gin machinery and supplies make the publication useful and attractive.

Dr. Freeman Fuller, Texas Entomologist, Dies

Dr. Freeman Fuller, Texas A&M College Extension entomologist, died March 12 after an extended illness. Following services at College Station, he was buried in Alabama, where he was born.

He was a member of the First Methodist Church of Bryan and a member of its official board; Entomological Society of America; many professional groups and a 32nd Degree Mason, Knights Templar and Shriner. He is listed in American Men of Science.

Dr. Fuller is survived by his wife, the former Marie Marshall of San Angelo; an infant daughter, Cynthia Caroline; his parents, Mr. and Mrs. F. M. Fuller, Sr., Suttle, Ala.; and a brother, Tom, of Greenville, S.C.

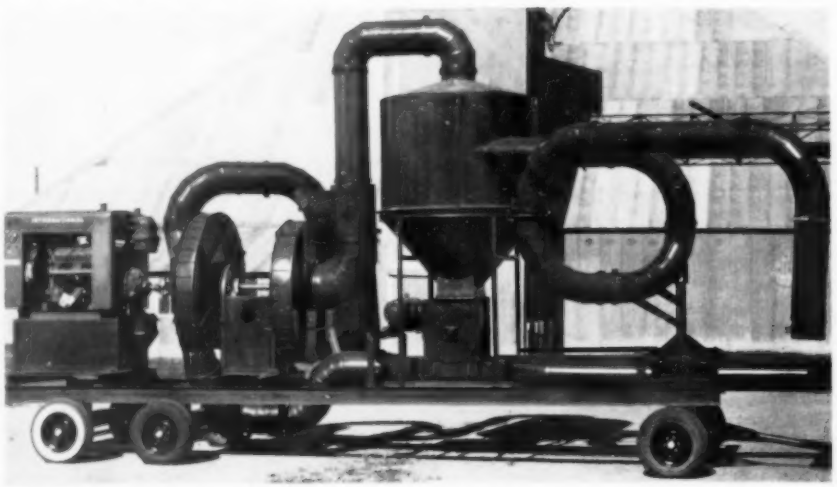
PORTABLE GRAIN UNLOADER

WITH THE SWIVELSCOPE FOR BOX CARS

To speed up box car unloading, we present our high pressure unloader with a new type pipe arrangement. One man can enter the car, and unload to full capacity . . . up to 50 tons per hour.

We fly our own plane and can be with you in a very short time . . . helping to lay out the BEST WAY TO UNLOAD.

If it moves by air—we can move it!



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1700 EAST NINTH ST. — PHONE FRANKLIN 5-1141 — LITTLE ROCK, ARK.

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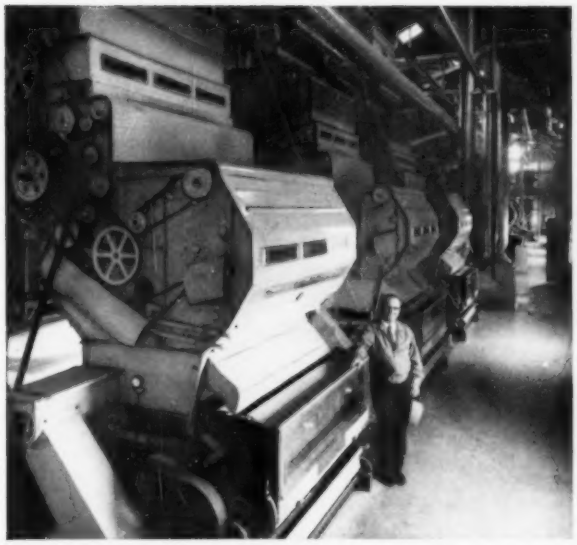
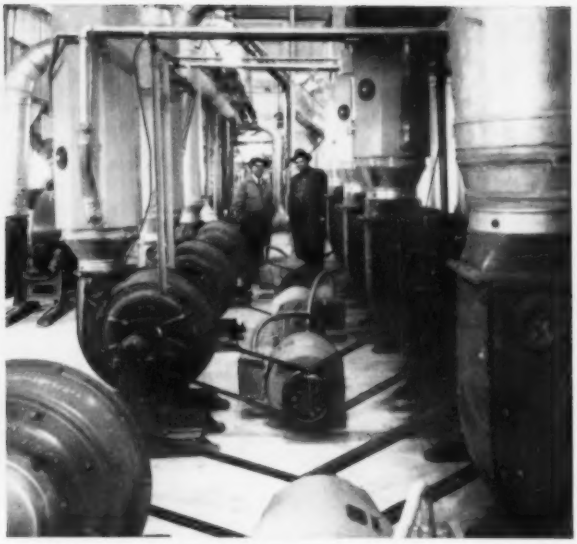


MR. KIRK DEAN, above, uses General Electric cotton gin motors at his double battery gin plant at Levelland, Texas.



RELIABLE, LOW-MAINTENANCE General Electric 50-hp motors are used to drive Murray Company fans at Long S Gin.

Mr. Kirk Dean of LONG S GIN says . . .

"I Ginned 8500 Bales Without Any Downtime Using General Electric Cotton Gin Motors"

At Long S Gin, Levelland, Texas, Mr. Kirk Dean is enthusiastic about the reliability and high performance of his General Electric cotton gin motors. Mr. Dean says, "I'm glad I bought quality G-E motors with my Murray equipment. Last year they helped me gin 8500 bales without any downtime."

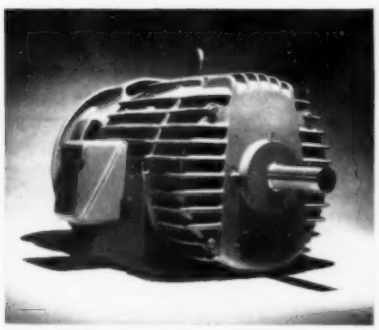
IN YOUR PLANT TOO, new General Electric cotton gin motors can help you increase production, slash maintenance costs and reduce downtime. These new motors are designed exclusively for reliable, efficient operation in even the toughest lint-laden atmospheres . . . *at no increase in initial cost.*

MAXIMUM LINT EXPULSION is achieved by exclusive new endshield design of G-E totally enclosed cotton gin motors. Unique feature prevents lint penetration into motor interior, virtually eliminates cleaning, adds to motor life.

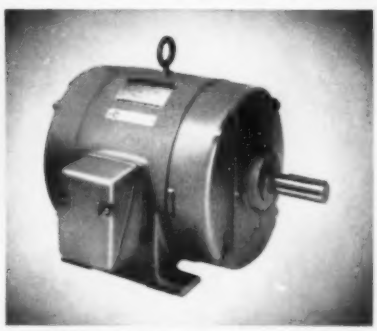
FOR APPLICATIONS OVER 30 HP, the General Electric screenless open type cotton gin motor provides reliable, low-maintenance motor operation—proved by over 25 years of cotton gin application.

FOR MORE INFORMATION on how General Electric cotton gin motors can help you reduce downtime and cut costs, contact your nearby G-E Apparatus Sales Office or distributor, or write for free bulletins GEA-6765, GEA-6795, Section 894-3, General Electric Co., Schenectady, N. Y.

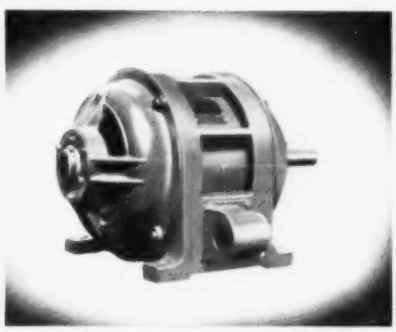
SELECT YOUR COTTON GIN MOTORS FROM GENERAL ELECTRIC'S COMPLETE LINE



TOTALLY ENCLOSED, fan-cooled G-E cotton gin motors are available up to 30 hp.



RELIABLE G-E dripproof motors fill need for general purpose applications.



G-E SCREENLESS OPEN MOTORS are designed for cotton gin needs from 30 to 100 hp.

See the new General Electric Cotton Gin Motors at the G-E Booth, Texas Cotton Ginners' Show, Dallas, April 5, 6, 7.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Progress and Prospects for Cotton Linters

60 YEARS OF SERVICE 1899-1959
THE COTTON GIN and OIL MILL PRESS
A 60th Anniversary Exclusive Feature

by O. H. ALDERKS, Vice-President, Research and Development Division, Buckeye Cellulose Corp., Memphis

BEFORE DISCUSSING the future of cotton linters, it would be well to review briefly the past performance of this commodity which has been used in the manufacture of a relatively large number of consumer and industrial products.

An over-all view of the uses of linters shows that the most important outlet has been in the **chemical industry** for the manufacture of rayon, acetate, plastics, sausage casings, explosive, lacquers, CMC, and other products. Until the past two years, which will be discussed later, about 60 percent of the total U.S. linters production was consumed in the chemical field.

The main **non-chemical** uses have been in the felting industry for such products as mattresses, automobile pads and batting, and furniture upholstery and stuffing, also medical absorbent cotton, sterile compresses and other medical supplies.

In almost every field of use, cotton linters encounter competition from other materials. In some cases linters possess physical characteristics which make them the preferred raw material for certain uses but in many instances a blend of materials is possible and often desirable.

Perhaps the most important disadvantage of cotton linters in competing with other materials is the relative instability of supply and price. Reference to Graph I will show the marked fluctuations of prices of second cut linters during the past 10 years. Also, the effects on linters pulp prices and the comparative stable wood pulp prices are shown.

• **Past Performance**—The total average annual U.S. production of cotton linters, based on the 1948 through 1957, 10-year period, was 1,619,000 running bales. (600 pounds approximate weight.)

This may be broken down further into about 24 percent first cut linters, 389,000 running bales; six percent mill run linters, 97,000 bales; and 70 percent second cut linters, 1,133,000 running bales. (See Table I for yearly figures.)

If one wishes to compare total linters production with total cotton production, for estimating purposes, the average linters production in running bales is about 11.5 percent of the normally reported cotton production (500 pound bales).

On the weight basis, linters production equals about 14.0 percent of the cotton production.

First cut linters are normally a "cut" of about 30 to 50 pounds per ton of cottonseed. The lower "cuts" produce higher grades containing relatively longer fibers. First cut linters contain from 10 to 25 percent of long, thin-walled cotton fibers left on the seed, and the remainder is the longer fraction of the linters fuzz fibers. These fuzz fibers are a genetically-separated fiber on cottonseed. They are relatively short, thick-walled fibers which give to first cut linters the important physical characteristic of resilience, useful in felting trades for the manufacture of mattresses, automotive and furniture stuffing and padding, etc.

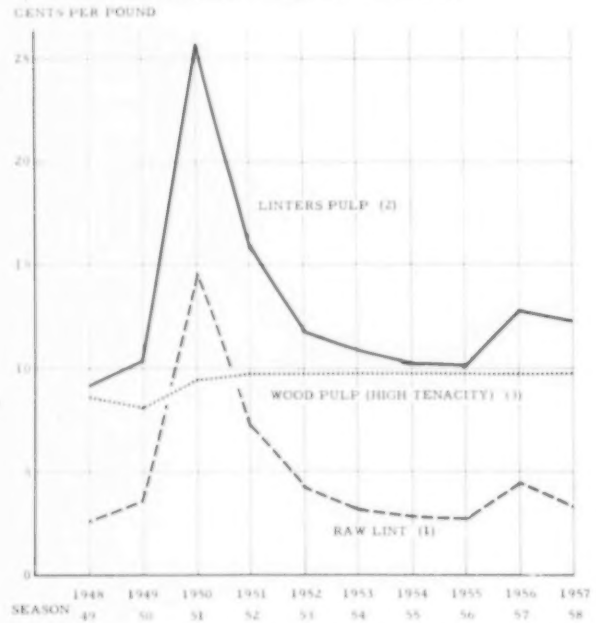
Mill run linters constitute a single larger "cut" from cottonseed of about 100 to 160 pounds per ton of seed, depending on the "grade" the oil mill wishes to produce. These linters are a mixture of eight to 12 percent cotton fibers and also the longer and shorter fuzz fibers. The product has intermediate value, depending on fiber length, and is used to blend with first cut linters in the production of felting materials.

As indicated, the recent average annual U.S. production of first cut and mill run linters has been 486,000 running bales. Reference to Table II shows that the U.S. annual consumption of linters for non-chemical uses has been about 100,000 bales per year greater than the combined first cut and mill run annual production. Apparently all of the first cut and mill run linters have been consumed annually and about 100,000 bales of higher grades of second cut linters also have been used in these non-chemical uses.

Second cut linters constitute about 70 percent of total linters production—the recent 10-year average production was 340,000 tons annually. However, cotton crop curtailment during the past three crop years, including the 1958-59 crop year, has reduced the available supply markedly.

Second cut linters normally contain about five to eight percent cotton fibers and the balance is thick-walled fuzz fibers. They have been used predominantly for the production of chemical dissolving

GRAPH I
AVERAGE SEASONAL PRICES
BEGINNING AUGUST 1st (4)



1. For uncompressed linters, carload lots, f.o.b. cottonseed oil mill points, excluding ports.
2. Commencing in January, 1955, prices are on a 10 percent moisture basis, delivered. Prior to January, 1955, prices are on a seven percent moisture basis f.o.b. pulp plant, with average freight to users of 0.50 cent per pound.
3. On 10 percent moisture basis f.o.b. domestic producing mill, full freight, and three percent transportation tax allowed.
4. Compiled from reports of the Southern Regional Research Laboratory, USDA Production and Marketing Administration.

TABLE I — U.S. COTTON - COTTONSEED AND LINTERS PRODUCTION

Crop Year Aug. 1st - July 31	Cotton Ginnings 500# Bales (1000 Bales)	Cottonseed Crushed (1000 Tons) *	Total Linters Production at Oil Mills Running Bales (1000 Bales) **	Total Lint Cut per Ton	First Cut Lint %	Second Cut Lint %	Mill Run Lint %
1948 - 49	14,877	5,332	1,639	183#	23.6%	71.1%	5.3%
1949 - 50	16,128	5,712	1,703	176#	25.3	68.2	6.5
1950 - 51	10,014	3,723	1,226	185#	28.2	65.0	6.8
1951 - 52	15,149	5,476	1,748	185#	24.4	69.2	6.4
1952 - 53	15,139	5,563	1,777	184#	24.8	68.8	6.4
1953 - 54	16,465	6,256	1,984	184#	23.8	70.6	5.6
1954 - 55	13,696	5,249	1,682	187#	22.4	71.6	6.0
1955 - 56	14,721	5,588	1,688	180#	23.6	71.1	5.3
1956 - 57	13,310	4,949	1,496	181#	23.5	71.9	4.6
1957 - 58	10,964	4,075	1,246	179#	23.8	70.2	6.0
				Ave.	24.3%	69.8%	5.9%

* Ave. % crushed for 10 yr. period - 90.15%

** Ave. 10 year ratio linters to cotton - 14.0% (Running bales are about 600#)

Source - U.S. Department of Agriculture Marketing Information - Vol. XL #11, Vol. XXIX #4

See!

The Hardwicke-Etter CENTURIAN

TEXAS GINNERS' CONVENTION, APRIL 5-6-7

THE WORLD'S ONLY 100-SAW GIN! Check these EXCLUSIVE features *not* found on *any other gin:* Split Huller Ribs, Hot Roll Box, Positive Vacuum Moting, Drive for Picker Roller V-type, Safety-hinged Air Nozzle Lip, Heavier Saws.

The CENTURIAN is another classic example of the enGINeering contributions toward the betterment and prosperity of America's cotton industry by HARDWICKE-ETTER. The best *engineering* makes the best *machinery.* And that's HARDWICKE-ETTER.

HARDWICKE-ETTER

all you need to know about gin machinery

TABLE II

U. S. CONSUMPTION OF COTTON LINTERS (1)
(1000 Running Bales (approx. wt. 500#))

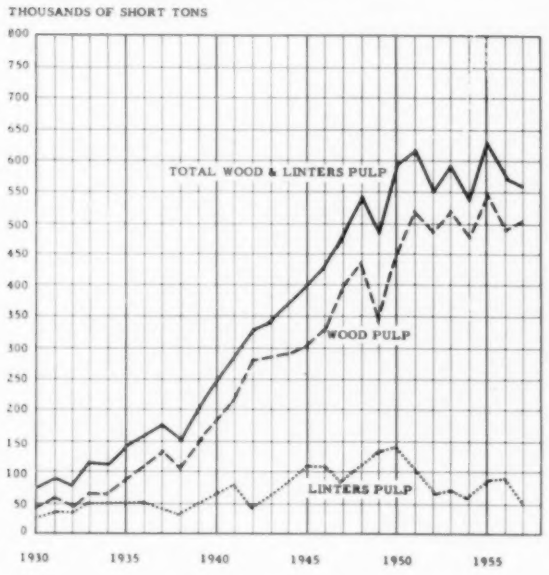
Year beginning August 1st	1948	49	50	51	52	53	54	55	(2) 56	(2) 57
CHEMICAL USES										
Viscose Rayon - Cupra	246	103	262	247	262	234	249	361	274	184
Acetate	197	196	225	108	81	42	69	111	121	105
Plastics, -Acetate & Butyrate	88	90	90	54	76	66	53	91	41	36
Nitro cellulose, -Expl. & Film	70	114	76	98	189	142	133	109	53	26
Paper, -fine writing - absorbent, etc.	40	49	38	22	38	53	69	97	44	59
Sausage casing	14	24	22	21	17	35	34	47	35	37
Cellulose ethers	27	42	38	22	38	34	33	36	19	22
Total Domestic Consumption	682	618	751	572	671	606	650	852	587	449
Exports - Refined Pulp	159	150	58	228	107	202	234	258	224	101
Total Chemical Consumption	841	768	809	800	778	809	884	1110	811	550
NON-CHEMICAL USES										
Mattress, Felts & Bedding	204	217	248	234	233	239	282	339	310	285
Automotive Batts & Padding	183	191	187	117	152	140	172	165	135	110
Furniture Stuffing & Padding	141	162	117	101	98	67	71	77	75	70
Paper, absorbent paper	10	10	5	24	26	27	33	39	40	40
Other non-chemical uses	27	68	30	30	73	43	32	55	47	45
Total non-chemical usage	565	648	587	506	582	516	590	675	627	550
Grand Total	1406	1416	1396	1306	1360	1324	1474	1785	1438	1100

(1) Based on Trade Estimates as reported by the National Cotton Council of America.

(2) Preliminary estimated figures.

GRAPH II

U. S. WOOD PULP AND LINTERS PULP CONSUMPTION IN RAYON AND ACETATE PRODUCTION



pulp, and, until the past two years, about 60 percent of the total U.S. linters consumption was in the chemical pulp industry. During the 1956-57 crop season, the linters used for chemical pulp production dropped to 56 percent and in the 1957-58 crop year to 50 percent of total linters consumption. This is a very marked reduction in the production of chemical pulp from linters. It represents a serious loss of market for linters chemical dissolving pulp in the high tenacity rayon market. (See Table III).

Cotton linters dissolving pulp is a high quality superior product. It has been used for the production of high-tenacity, fatigue-resisting rayon cord and also for the most critical quality acetate products where highest purity and color stability are important factors. In recent years research has developed chemical wood pulps of high purity from which the rayon industry has learned to produce high tenacity cords of equal strength and satisfactory fatigue resistance. In addition, the wood pulps have a considerable advantage over linters pulp in ease of processing during the viscose processing

(Continued on Page 68)

INVEST IN A REAL MONEY MAKER . .

PLANT Watson COTTON

FOR HIGHEST YIELD, COARSER FIBRE

Read what Carl Uland, Plano, Texas, has to say about Watson Stormproof Cotton

"I OPERATE a cotton stripper on my own crop and also do work for the public. I stripped in approximately 11 fields this past fall, containing five different types of cotton. Next to the last field was Watson's Stormproof. The field was the most heavily infested with Johnson grass I had stripped in. The cotton had stood the weather perfectly, stripped better and brought approximately 5¢ per pound more in the loan than any of the other cotton I had stripped. Watson's Stormproof cotton certainly proved to me it is a good cotton to plant."

INVEST IN A REAL MONEY MAKER . .
PLANT Watson Cotton
FOR HIGHEST YIELD, COARSER FIBRE

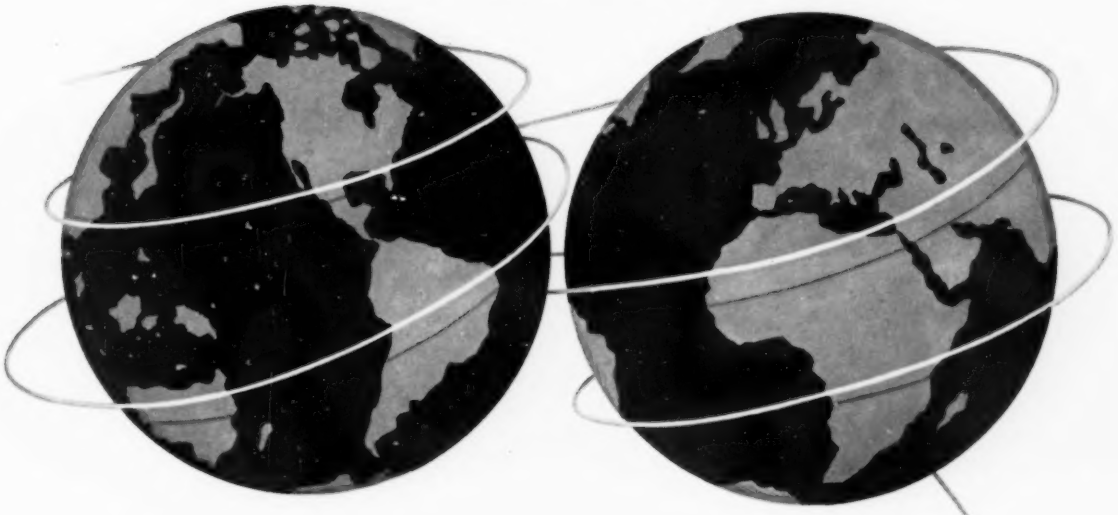
STATE REGISTERED WATSON PLANT BREEDERS

OTHER WATSON VARIETIES: Empire - Stoneville 62 - D&PL - Watson - Rowden.

FERRIS WATSON SEED COMPANY

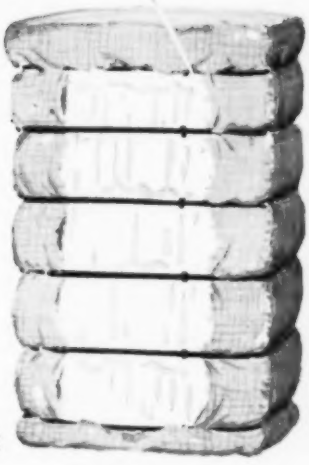
GARLAND, TEXAS

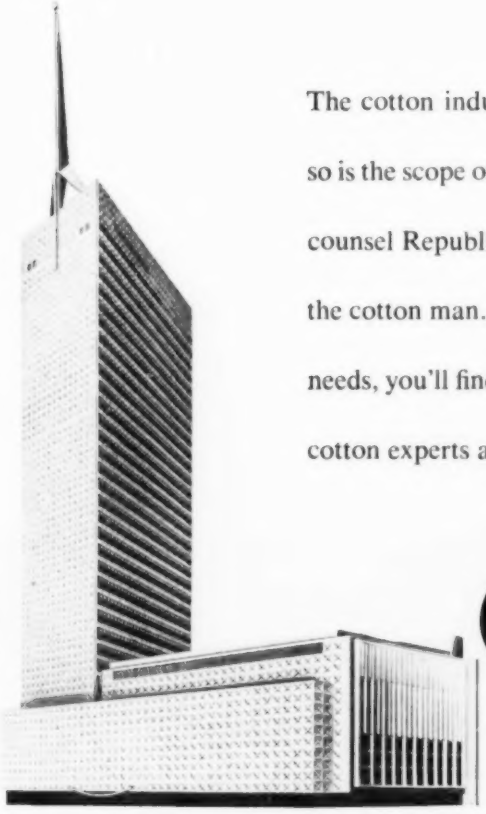
. . . around the WORLD



REPUBLIC

works with the Cotton Man





The cotton industry is international . . . and so is the scope of the financial guidance and counsel Republic National Bank offers to the cotton man. Whatever your cotton financing needs, you'll find it pays to rely on the cotton experts at Republic for the right answers

ADDED STRENGTH YOU CAN BANK ON

REPUBLIC
National BANK of Dallas

CAPITAL AND SURPLUS $100,000,000
LARGEST IN THE SOUTH

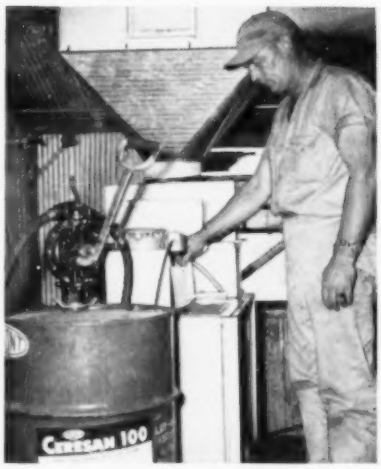
MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

"New, Du Pont Ceresan® Liquid has pleasant odor—gives greater economy—better results on cottonseed"

SEED DISINFECTANTS

says Mr. P. S. Stovall, Vice-Pres. and Gen. Mgr., Hollandale Seed & Delinting Co., Inc., Hollandale, Mississippi

"We treated cottonseed with new, 'Ceresan' Liquid 100 and found it unusually pleasant to work with," continues Mr. Stovall. "Odor is more acceptable, and seed is given a strong, uniform red coloring, which makes identification easy. We got greater economy, too—there's no waste, and cost is favorable. Consumers really accept this product, and that makes our selling job easier."



▲ **Jack Wilson,** plant superintendent at Hollandale, checks measurement of "Ceresan" Liquid to assure top results in control of cotton diseases.

◀ **The Hollandale Co.** reports stands increased as much as 23 per cent after treating seed with new, liquid "Ceresan" 100. At harvest time this meant up to 200 extra pounds of seed cotton per acre.

Three new "Ceresan" Liquids are winning the praise of seed treaters everywhere. They offer exceptional control of disease organisms . . . assure maximum efficiency. There's no objectionable odor; no dust problem. They are non-freezing to minus 40°F. They help speed up seed treating . . . won't settle out, stick tight to seed for lasting protection.

You can be sure of superior economy and performance with new "Ceresan" Liquids. Longer equipment service life, too . . . they keep corrosion to a minimum. There are 3 new liquids to meet your needs: "Ceresan" 75 for ready-mix treaters; "Ceresan" 100 for slurry or mist-type, ready-mix treaters; and "Ceresan" 200 for slurry treaters.

Increase stands and yields... plant cotton seed protected against disease with Du Pont CERESAN®
Always look for this tag on the bag!
CERESAN
DU PONT
CERESAN®

...and Du Pont advertising helps sell your services

Throughout 1959, Du Pont advertisements such as the one shown here will tell farmers about your services. Each advertisement features you and the benefits of treating seed with "Ceresan" Liquids. Look for these ads—they'll appear in millions of copies of farm publications in the next few months alone.

On all chemicals, follow label instructions and warnings carefully.

DU PONT
Better Things for Better Living
. . . through Chemistry

CERESAN® LIQUID
Seed Disinfectants
The "Magic Key" to Bigger, Better Crops!

THE OPENING SESSION of the 1959 Western Cotton Production Conference at Phoenix is shown in this scene. Left to right in the picture are: Dr. H. R. Carns, plant physiologist, USDA, UCLA, Los Angeles; Dr. John T. Presley, head, Cotton Disease Section, USDA, Beltsville, Md.; Claude L. Welch, director, Production and Marketing Division, National Cotton Council; Dr. Richard A. Harvill, president, University of Arizona, Tucson; Dan W. Clarke, president, Arizona Cotton Growers' Association, Tucson; Dr. W. D. Fisher, agronomist, Arizona Experiment Station, Cotton Research Center, Tempe; Dr. Donald C. Erwin, assistant plant pathologist, California Experiment Station, Riverside.

Western Production Conference Stresses Costs and Quality

Newest developments are reviewed at Phoenix, March 3-4; Tour of Arizona Research Center is feature of meeting.

QUALITY IMPROVEMENT AND COST REDUCTION were emphasized in the papers presented March 3-4 at the 1959 Western Cotton Production Conference. Sessions were held at Hotel Westward Ho in Phoenix, Ariz. Sponsors of the annual meeting, which will be held in California's San Joaquin Valley in 1960, are the Southwest Five-State Cotton Growers' Association and the National Cotton Council. Arizona Cotton Growers' Association was the local host at Phoenix.

Organizations which cooperate with the sponsors in arranging the Conference include land-grant colleges, the agricultural chemicals industry, U.S. Department of Agriculture, vocational agriculture leaders, farm organizations and other groups.

The following material constitutes the summary-proceedings of the Conference, and will be distributed by the sponsors as reprints from The Cotton Gin and Oil Mill Press:

Opening Statement

DAN W. CLARKE, General Chairman; President, Arizona Cotton Growers Association, Tucson.

Many of you will remember when we staged the first of these conferences—back eight years ago—our main interest centered on defoliation. We were beginning to get our yields up to a bale and a quarter, and a bale and a half, per acre. With these heavier yields, we were getting into problems with boll rots, and with lodging. Also, labor was getting more scarce and higher priced; we realized we'd have to depend more and more on mechanical pickers. All these things tended to turn the spotlight on defoliation. We had to know what to use, and when to use it, and how to use it. And the first of these conferences was mainly for the purpose of bringing together the people who knew the most about the subject to help us develop the best possible answers for our defoliation problems.

However, we were also beginning to realize that defoliation was just one of several problems. In pushing ahead with yield increasing practices, and with mechanization, some other bottle-necks were showing up. The second conference program, for example, covered the latest developments in insect control, as well as defoliation. During the years these conference programs have been broadened to cover just about all the practices, and all the problems, that are involved in moving ahead toward lower cost and higher quality production in this Western region.

Our program this year continues that pattern. Subjects have been carefully selected for the purpose of developing information that will be useful to us in making this year's crop at the lowest cost possible—and which will help us produce the highest quality possible.

I feel sure everyone here understands how important it is that we get our costs down and our quality up. We can't have a cotton industry very long unless we have markets; and to have markets, our cotton needs to be competitive on the basis of both price and quality. This all points toward accepting somewhat lower prices. But if we are to sell our cotton at prices which are more competitive, and still expect to realize a reasonable income from producing it, we must also lower our costs. Our main hope for doing this is through research—and the application of research results to our individual operations.

◆ ◆

Western Cotton's Opportunities

DR. RICHARD A. HARVILL, President, University of Arizona, Tucson.

Many factors contributed to the westward movement of the cotton industry. Since the end of Warld War II, generally favorable cotton prices and scientific technological developments in breeding, fertilization, irrigation, insect control, harvesting, and ginning have cooperated to give the Southwest a comparative advantage.

Many of these advantages are associated with two major production factors: irrigated agriculture, and the large scale, mechanized farming. Irrigation gives the grower the control needed for maximum yields made possible through research in breeding, fertilization, and the use of insecticides. The long, sunny days provide another important factor in the cotton production equation. Large-scale, commercial farming operations permit specialized management, intensive mechanization of production and harvesting. And the

availability of adequate credit ties these technological advantages into a package which is within the financial reach of all producers.

Finally, adequate prices—and perhaps even acreage allotments—have provided the incentive for producers' attempting to get the very last pound of yield possible from every acre planted.

• **Production Trends**—During the period since 1945, cotton producers have been faced by per-acre costs which have risen more rapidly than prices. It is only through greater efficiency, as evidenced by greater yields, that our growers have been able to keep costs per pound of lint produced at levels which permit the profitable development of the industry.

Acreage allotments now in effect make it difficult to take full advantage of the labor-saving and cost-reducing opportunities currently available to the Western cotton producer. Hence not all economies possible have been practiced.

Although the acreage of cotton harvested in Arizona dropped from 690,000 in 1953 to 343,000 in 1958 (a cut of almost 50 percent), net returns per acre have remained at a high level. In five of the last nine years this return has exceeded $135 per acre. The next most profitable general field crop in Arizona is alfalfa, yielding a net return only about one-fifth that of cotton.

It is suspected that this relatively profitable return for Western cotton growers, in spite of the drastic acreage cuts and resulting loss of efficiency, has played an important role in the passage of the Agricultural Act of 1958 which moved the cotton industry in the direction of more competitive prices. American cotton must—and can—compete price-wise and quality-wise on a fair basis in domestic and foreign markets with synthetics and with the cotton grown in other areas of the world.

• **Quality** — Until a few year ago some of the Western-grown product sold at sizeable discounts under comparable grades and staples of rain-grown varieties. Recent research has shown that today the term "irrigated" when used in reference to these Western growths no longer carries the stigma it once held among mill owners. Rather, it now denotes a strong, even-running, uniformly white fiber averaging 1-1/16 inch in staple length which is much in demand for the manufacture of numerous items.

In the Southwest this industry is characterized by a high degree of integration in all phases of financing, processing, and marketing. Hence the scale of operations and organization of the industry differ materially here from other areas where cotton is grown. Partly as a result of this integration, new technologies and improved marketing practices have been put into effect earlier in the West than in other sections of the country.

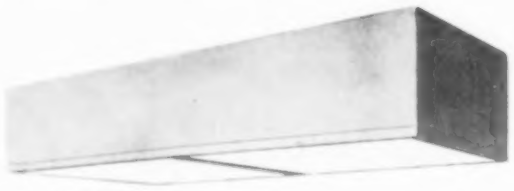
Extra-density gin presses and automatic sampling devices have been incorporated in many of our Western gins. Our leadership in this regard is shown by the fact that during the 1956 season there were 109 extra-density gin presses in use throughout the U.S., and 101 of these were in the Western area. Also, of the 50 automatic samplers now in use, 49 are located in Texas and other parts of the West. To the extent that these two devices eliminate certain handling costs and tend to improve the appearance and quality of the bale, marketing costs should be reduced and market acceptance of Western cotton enhanced.

The lessons of history make it pretty clear that the survival of any competitive industry is ultimately determined by its ability for continual progress. If we look searchingly at cotton's future, there is no basis for believing that it can run counter to the laws of economic survival; its future depends on study and research just as surely as its present stature was built on research. In my opinion it is a future that offers almost limitless opportunity for developing a stronger, more prosperous cotton industry in this region.

• **The Market** — There is an expanding potential market for textile raw materials in this country and abroad—a market potential that could make our surplus problems melt away. For example, cotton consumption in the rest of the world has shown a steady rate of increase every since the end of World War II. The tragic aspect of this is that U.S. growers turned most of this expanding market over to their competitors. But the point is that the rest of the world does offer a market that promises to keep right on expanding, and I believe U.S. producers can have a share in that expansion on a sound, economic basis.

The market picture here at home is still far more hopeful than some would portray it. True, our total domestic consumption has not shown any definite trend, either upward or downward, since the end of the war; but this overlooks the fact that significant changes have

(Continued on Page 50)



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- The new TC-440 (twin channel)* Examolite can be used with existing fixtures, and is a better, easier to maintain, fixture at a lower cost.

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For complete information on the new TC-440 Examolite fixture and/or tubes and bulbs for relamping, address correspondence to Dept. C, Macbeth Daylighting Corporation or your nearest Macbeth representative.

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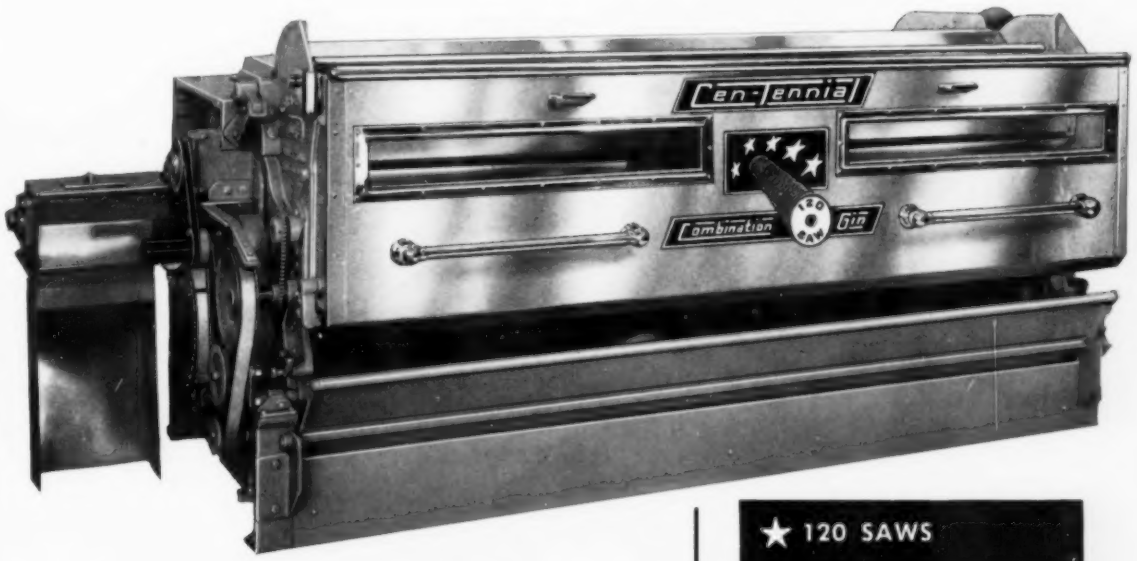

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The Perfect Combination—"Cleans as it Gins"

Cen-Tennial COTTON GIN CO.

DALLAS, TEXAS COLUMBUS, GA. MEMPHIS, TENN.

Rickman Succeeds Wilson

Supima Will Fight To Continue Gains

■ PROGRESS in making U.S. staple accepted as finest fiber listed; Association working to protect industry from imports.

Plans for future activities were drafted by the Supima Association of America at its annual meeting March 4 in the Westward Ho Hotel, Phoenix, Ariz.

Retiring President Clyde Wilson of Buckeye, Ariz., listed achievements in sales promotion and increased consumption of the long staple cotton which have attracted wide praise for the Association's sound program. He also discussed problems which have hampered the industry.

Wilson, George Spence of Texas and Mark Rickman of New Mexico were re-elected to the board of directors.

Directors elected Rickman, who lives at LaMesa, N.M., president; Frank Crews, vice-president for Texas; and Al Oshrin, vice-president for Arizona. Spence was re-elected treasurer; and Harry Moore was re-elected secretary. Mitchell Landers has served as executive vice-president of the Association, with headquarters in El Paso; and Mary Alice Stewart has headed sales promotion activities from New York.

MARK RICKMAN

Wilson reviewed the organized efforts which have proved that quality, price and promotion of the domestic cotton could, in four years, make Supima the choice of manufacturers and consumers who formerly looked abroad for such cotton. He also listed factors, beyond the control of domestic producers, which prevented full achievement of the Association's activities; but expressed confidence that sound policies will prevail in time. He estimated that Association activities have been responsible for at least 50,000 acres of Supima allotments during the past two years.

The major problem facing U.S. Supima producers, officials emphasized, are imports of foreign long staple which other governments sell at cut-rate prices, regardless of market values. The U.S. industry has asked for hearings to present facts showing the need for restriction of such imports, and their request has been supported by USDA and other leaders familiar with the problem.

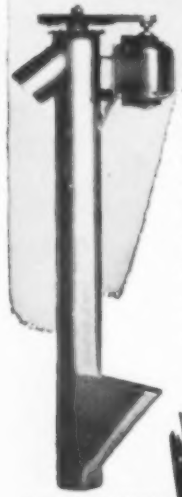
Leaders in the Association expressed determination to fight for opportunity to grow the long staple, which is now recognized as the world's finest, in sufficient quantity to provide a dependable supply for mills which want to use it as a result of Supima's promotional program.

Want a Nice Year 'Round Profit...?

Install KELLY DUPLEX feed mill equipment

VERTICAL FEED MIXER
Available in 6 sizes ½ to 5 ton capacity—to meet any need.

With grain becoming increasingly more important in the agricultural economy of the South, forward-looking cotton ginners have already adapted their operations to include Kelly Duplex grain handling and processing equipment. They've found that this equipment, designed and built for top efficiency, low maintenance and long life, is able to give them steady, year 'round business and employment ...greatly increased volume... and, above all, a GOOD profit. It can do the same for you!



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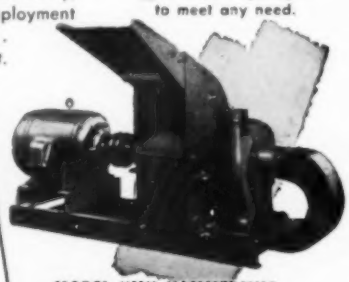

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Norman Flora, Gin Erector, Dies in Birmingham

Norman V. (Pete) Flora, 67, veteran gin erector with Continental Gin Co., Birmingham, died March 12. He had been in the erecting and service department for 22 years, and was in charge of the demonstration plant at the time of his death.

He was buried at Shuqualak, Miss., where he was born. He was a member of the Presbyterian Church. Survivors are his daughter, Mrs. Beth Irvin, Tuscaloosa, Ala.; and a son, J. Kellis Flora, Huntsville, Ala.

■ WILLIAM T. GARTSIDE is now manager of oil sales for Iowa Soya Co., Redfield, Iowa. His offices are in Chicago. LLOYD J. SMITH now is sole proprietor of W. T. Gartside Co., oil brokers, at 2546 Peterson Ave., Chicago.

Greater Oil and Solvent Recovery... Higher Quality Extracted Oils... MORE PROFITS... with Espesol Normal Hexane & Heptane

Espesol Normal Hexane and Heptane are produced by methods that are *unique* in the field. Through a controlled hydrocarbon breakdown, extractors receive fine quality Espesol solvents containing a high percentage of paraffins and with an extremely low aromatic and naphthene content. Low vapor pressure and a very narrow boiling range (Typicals: Hexane, 152°-156°F; Heptane, 201°-207°F) afford greater economy and profits because of increased solvent recovery and maximum oil yield. Low sulphur content results in extracted oils with reduced odor and color.

Write for additional information on Espesol Normal Hexane and Heptane. For immediate service, call the office nearest you today!

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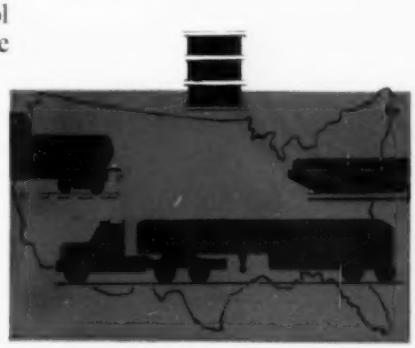

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Price $40 per Share

Fulton Cotton Mills Make Offer To Buy Continental Gin Co.

■ **OWNERS of 130,000 shares signify intention to accept. No change in policy or personnel planned.**

FULTON COTTON MILLS, INC., Atlanta, has offered to buy all 292,327 outstanding shares of common stock of Continental Gin Co., Birmingham, officials of Fulton have announced.

If all shares were purchased, the offer of $40 a share would involve $11,693,080. The offer depends upon acceptance by two-thirds of the shares.

Fulton officials said that Continental Gin Co. will become a division of Fulton, with no change in operations or personnel, if the purchase is completed.

More than 130,000 shares of Continental stock have been deposited under an escrow agreement between Trust Co. of Georgia and Fulton. Other shareholders have until April 30 to accept the offer.

George W. Woodruff, one of the principal stockholders of Continental Gin Co., said owners of 130,000 shares, including the Woodruff family and Woodruff Foundation, have signified their intention to sell. They have deposited stock certificates with the Trust Co. of Georgia.

Continental Gin Co. has manufacturing plants in Birmingham; Prattville, Ala.; and Dallas; and maintains other offices in Memphis, Phoenix, Harlingen, Lubbock and Tulare. In addition to cotton ginning machinery, the firm makes machine tools, conveying and materials handling equipment and other machinery.

International Seed Crushers Ready for Reservations

Residents of the U.S. are urged to make their reservations for attending the meeting of International Association of Seed Crushers June 2-5 at Cannes, France. The U.S. fats and oils industries will be hosts for the 1959 meeting.

George L. Prichard, 1017 National Press Building, Washington, 4, asks that delegates send his office registration information and a fee of $14.40. Bulk remittances will be sent to the Syndicat General des Fabricants D'huile et de Tourteaux de France, 10, Rue de la Paix, Paris, which is handling the hotel accomodations.

• Texas Crushers Hosts During Field Day

COTTONSEED CRUSHERS were hosts at two events associated with the annual field day at Texas Technological College, Lubbock, March 14.

Texas Cottonseed Crushers' Association had about 80 livestock feeders, ranchmen and oil mill representatives at a banquet on the evening before the field day.

Robert L. Horton, chairman of the college relations committee, presided and Kenneth O. Lewis, NCPA Research and Educational Division field representative, conducted the panel discussion.

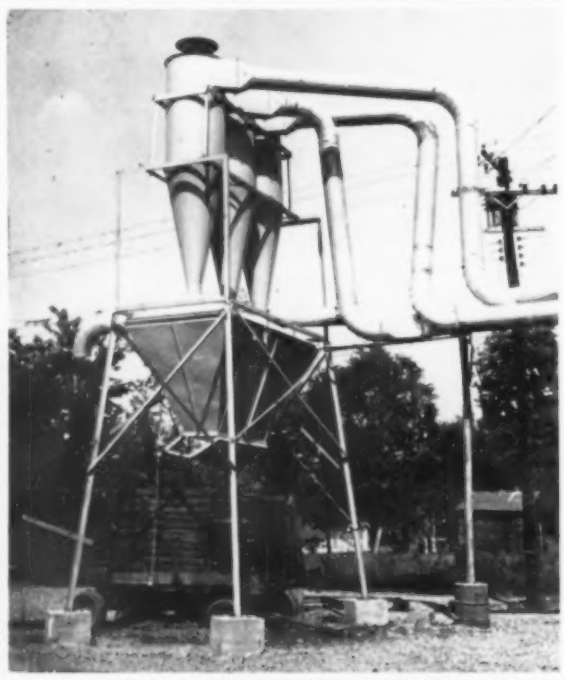
President W. D. Watkins, Vice-President B. W. Beckham and Secretary-Treasurer Jack Whetstone of the Texas Association; and Research and Educational Division Director Garlon A. Harper of NCPA were among those attending.

The three cotton oil mills in Lubbock —Lubbock Cotton Oil Mill, Plains Cooperative Oil Mill and Western Cottonoil Co.—were hosts March 14 at the barbecue during the field day.

James Cloyd, graduate student holding the Texas Association fellowship, reported on his cottonseed feed products research. His work has been in comparing cottonseed hulls in pellets of different sizes in different types of rations.

J. D. Peeples Dies

J. D. Peeples, 73, died in Memphis after being stricken during the Midsouth Gin Supply Exhibit meeting. He was co-owner of a gin at Lehi, Ark. Services were held March 10 in Memphis.



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HULL AND TRASH COLLECTING SYSTEM

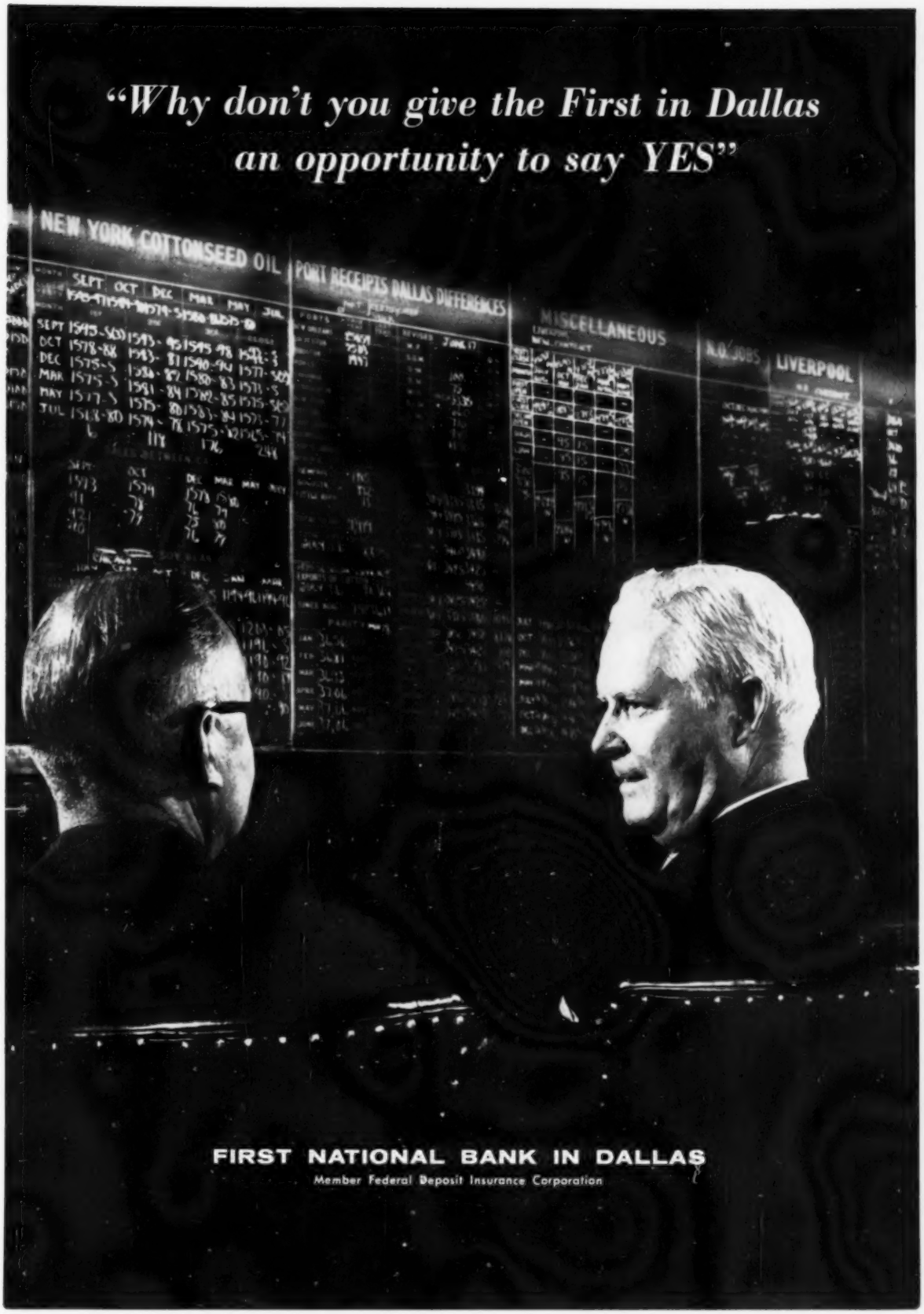
Eliminate the unsightly hull pile, plus obnoxious smoke, sparks and fire of improvised incinerators.

Custom Engineered for any size gin. Fabricated for quick erection by gin crew. Complete with anchor bolts and blue prints.

If you have a hull pile problem, you can't afford to be without this trouble-free hull collecting system!

Write, wire or call:

WONDER STATE MANUFACTURING CO. **Paragould, Ark.**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NEW YORK COTTONSEED OIL
PORT RECEIPTS DALLAS DIFFERENCES
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HUMIDIFYING COTTON Before Ginning

Part II

THIS, the second of two articles, describes a new system for raising the moisture content of seed cotton before ginning. Simple calculations of some of the factors involved in humidification are presented.

By SAMUEL G. JACKSON

Samuel Jackson Manufacturing Co.
Lubbock, Texas

IN the preceding article[1], Bill K. Power described work done at the Textile Research Laboratories, Texas Technological College, Lubbock, which definitely established the need for moisture control in ginning. It was brought out that cotton which had not been overheated, in fact which had not been artificially dried, could be seriously damaged by ginning it at a low moisture content. Since the optimum moisture content for the actual ginning process is higher than the moisture content which will be obtained if seed cotton is dried to obtain the best grades, it is readily apparent that there should be some practical means of increasing the moisture content of the fiber just before the seed cotton reaches the gin stand.

• **Problem Is Involved** — A few figures will give an idea of just what the problem involves. Under typical conditions, it is desirable to increase the moisture content of the fiber from four percent to six percent, this means that 80 pounds, or almost 10 gallons, of water per hour must be added to the fiber. This is the net amount of water which must be added, with no allowance for any added to the seed or burs, or wasted.

If one should try to spray this much water into the seed cotton at the conveyor distributor, for example, the result would be swift and sure—the feeders and gin stands would choke down. Here the problem lies not in the quantity of moisture, but that it is in a liquid form.

It might be thought that the answer to this problem is to pipe large quantities of steam into the feeders and thus increase the moisture content of the seed cotton before it drops into the gin stand. Unfortunately, it has been found that the steam condenses on the saws and other parts of the feeders and produces a choke-up at least as bad as that produced by spraying water.

In light of the impracticality of these two methods of humidification, it would seem that the most promising method would be to blow humid air through the seed cotton while it is in the feeders. In this way, the moisture would be uniformly applied to the cotton fiber, and should not cause choke-ups.

This method of humidification poses some questions. How much humid air is necessary? How humid should the air be? What should be the temperature of the air? Perhaps some answers can be obtained by considering a few more figures.

For a given cotton moisture content and a given temperature, there is one relative humidity at which no moisture will be exchanged between the cotton and the air with which it is in contact. This corresponding relative humidity is called the equilibrium condition of the air. If the cotton comes in contact with air which is more humid, it will absorb moisture from the air. If less humid, it will lose moisture to the air.

Since the air acts as a vehicle to carry moisture to the cotton, its humidity must decrease as it gives up its moisture to the cotton fiber. We must therefore have enough air to give up 10 gallons of water per hour and still be at a humidity considerably higher than equilibrium so the exchange can take place at a fast rate—the air is in contact with the cotton for only a few seconds.

If we were to supply air at 60°F and 80 percent relative humidity and expect it to give up 10 gallons of water per hour in falling to 60 percent RH, 8,220 cfm of air would be required. To supply the same quantity of moisture in falling from 80 percent to 60 percent RH using 100°F air, only 2,270 cfm would be required. It is obviously advisable to use warm, humid air for humidification as warm air is a much more efficient carrier of moisture than is cool air.

• **New Solution Developed** — If a boiler were used to humidify the air, the 300 pounds per hour of make-up water required would present quite a scaling problem if operated on a continuous basis. A better means of producing large volumes of warm, humid air is highly desirable.

More than four years ago the writer started design work on such a system. The system finally devised is shown in the accompanying illustrations.

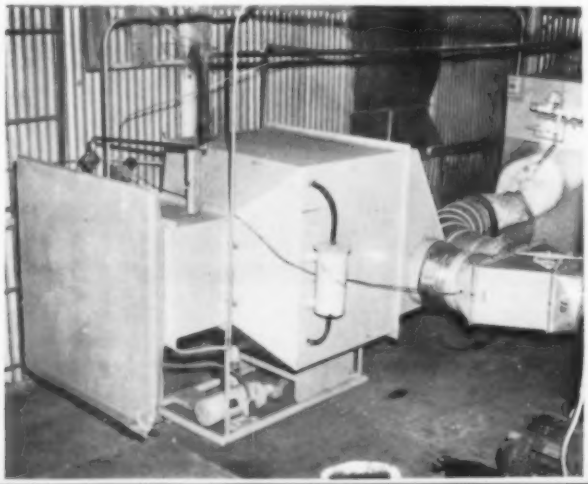
The air to be humidified is drawn into the humidifier through a heater section, then into a spray chamber where a large quantity of water is recirculated and sprayed. Next the air goes through a set of zig-zag baffles which sling the water droplets out of the air and allow only warm humid air to issue from the humidifier. The air then enters a fan which blows it into the feeders to perform its job of raising the moisture content of the seed cotton.

Automatic controls throttle the burner and the recirculated water to maintain the proper conditions of temperature and relative humidity. An electronic control has been made which measures the moisture content of the seed cotton issuing from the feeders and changes the

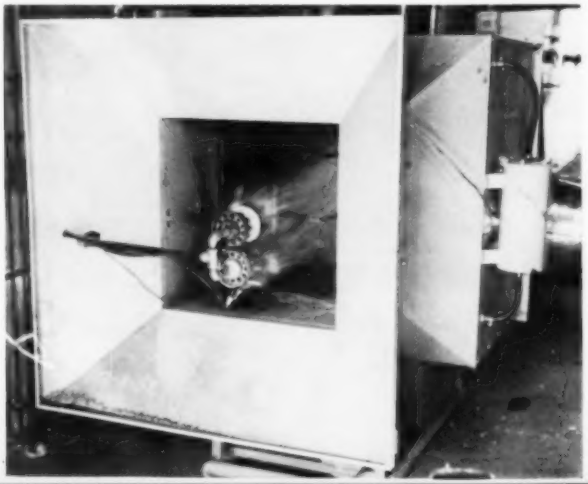
(Continued on Page 48)

[1] Power, Bill K., "Moisture Content, Key to Fiber Quality Preservation," The Cotton Gin and Oil Mill Press, Feb. 21, 1959.

Installation of Jackson Humidifier in a gin. Screened air intake is seen at left.



Burners and interior of spray chamber as seen when intake screen is removed.



• Meeting Discusses Labor Problems

FARM LABOR PROBLEMS, including legislation and unionization, were discussed March 18 at a Dallas meeting of representatives of employers of agricultural labor. George W. Spence of El Paso presided and about 200 farmers, ranchmen and others attended.

Proposed legislation and regulations would increase costs for producers and processors of agricultural commodities, they emphasized, and such increases would come at a time when farm prices and net income are declining.

They also called attention to housing regulations and other requirements which make it increasingly difficult for farm operators to make use of needed labor.

Deere Castor Harvester Will Aid U.S. Industry

A new castor bean harvester made by Deere & Co. marks "another cornerstone in the foundation for large-scale domestic castor bean production," according to Baker Castor Oil Co.

An attachment for the John Deere 55 Combine, the harvester was developed in two years of laboratory and field research. Six attachments are being made in 1959 for use on the High Plains and in the Far West.

City Official Agrees

Mill Manager Not Worried By "Nuisance" Suit

C. W. Hasen, general manager, Chickasaw Oil Mill, Inc., is quoted by Memphis Commercial Appeal as "suprised but not concerned" over a suit charging the mill as a "public nuisance."

Hasen said that the mill was at its present location, 642 South Cox Street, before present Memphis zoning ordinances were adopted in 1921, and all additions to the plant have been made with city permits. City Building Inspector Howard Slover has confirmed Hasen's statements.

Home owners in the Central-East Parkway area filed the suit, involving the plant's soybean operation and an elevator.

Chickasaw secured building permits for the elevator about two years ago and an additional building in 1950.

"The equipment we put in is not for soybeans at all. That was put in to unload cottonseed and has nothing to do with soybeans. It didn't unload one pound of soybeans," Hasen added.

He said the company is crushing beans only to "prolong the crush" since short cotton crops have been unable to keep the plant busy. Soybeans were crushed only in February.

Cotton Cloth Prices Up

Cotton print cloth prices have risen to the highest level since January, 1957, for some qualities.

■ **DAVID McVEY, vice-president and manager of the feed division, General Mills, has resigned to return to law practice in Minneapolis.**

In Navarro County

Acreage Allotment Transfers Will Be Worth $850,000

Navarro County, Texas, stands to gain $850,000 for growers, alone, because the Seven-Step Cotton Committee and ASC Committee cooperated. They made 10,130 cotton allotment acres, that otherwise would have been idle, available to growers.

John Burleson, County Agent, estimates that these acres will produce at least 5,000 bales to bring producers $850,000. Last year, Navarro had 5,000 acres of idle allotments. ASC and Seven-Step Committees, and special grower committees got the release of 10,000 acres in 1959 and the assurance of farmers receiving the added allotments that they will be fully planted.

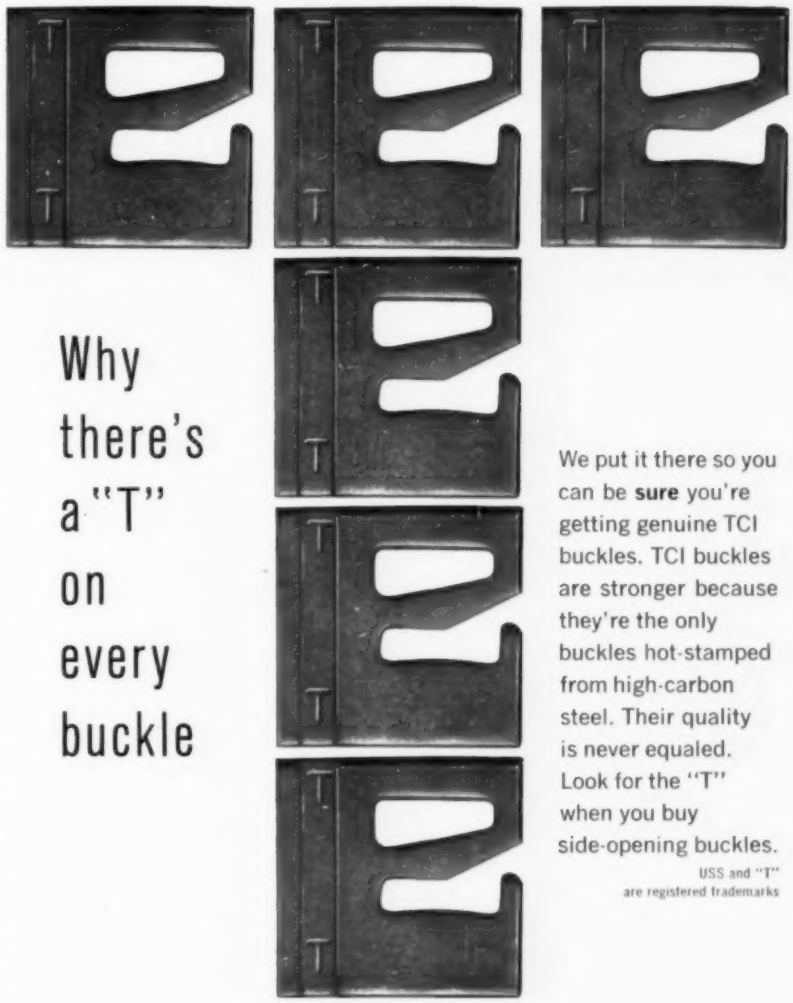
Dairy Supports Unchanged

Dairy products price supports will be kept at the same level in 1959 as last year, USDA has announced.

Price Chart on A and B

Plains Cotton Growers, Inc., Lubbock, distributed a practical and useful card containing Plan A and Plan B price information during March.

■ **CURTIS W. STEVENS, Farmers' Co-op Gin, is a director of the Tahoka, Texas, Chamber of Commerce.**



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as viewed from The PRESS Box

• More on Lint Quality

QUALITY IMPROVEMENT is emphasized in a number of the papers from the Western Cotton Production Conference which are published in this issue of The Press. We recommend these discussions of quality to our ginner readers, especially, because of the necessity for meeting quality competition at U.S. mills, as was pointed out in articles in the March 7 issue.

Ginners also will be especially interested in the discussion of humidifying cotton on Page 30 of this issue of The Press.

American Cotton Manufacturers' Institute, which sponsored the mill tour reported in the March 7 issue, obtained 75 copies of The Press for use at its annual convention in Palm Beach, Fla., March 19-21.

Comments on special cotton quality articles in the March 7 issue include the following:

DWIGHT M. WILHELM, executive vice-president, Alabama Textile Manufacturers' Association: "The accurate and interesting 'Big Fight' article is well and thoroughly done, and the accompanying 'Mill Tour Comments' are most timely. I particularly like the comment by Peary Wilemon, president, Texas Cotton Ginners' Association. It seems to me he has actually forecast the future . . . and it will be interesting to note how closely he has come to showing what will actually happen. It is cheering to the entire textile industry to notice that both articles mention competitive pricing, quality control, research and promotion and the one-sided battle with un-needed low-labor-cost textile import program of our own government."

F. S. LOVE, secretary-treasurer, American Cotton Manufacturers' Institute: "This points up, clearly and dramatically, the need for all of us to work together if cotton is to survive."

JOHN H. TODD, executive vice-president, National Cotton Compress and Cotton Warehouse Association: "Your March 7 issue is definitely on the right track . . . a point I stressed at the recent meeting of the Cotton and Cottonseed Research and Marketing Advisory Committee was that probably the greatest problem of the cotton industry is to find an accurate, dependable means of identifying at the gin (or at least in a sample drawn from the bale) and appraising the actual spinning qualities . . . unless this is done, mills will be paying a premium for inferior quality and ginners and gin manufacturers may be exerting themselves to devise and employ machinery which results in such inferior qualities, although the apparent grade is higher. Clearly, most ginners and the gin machinery manufacturers are trying to produce and operate gins that will do the best possible job. Unless they can measure the results of their work in terms of qualities which the spinners must have, we willl continue to be hag-ridden by this problem."

• New Synthetic Plants

DU PONT spent a record $231 million during 1958 for new plants and improved and enlarged facilities. Four new plants began operation last year for the production of pure silicon, "Orlon" acrylic staple, cellophane and nylon tire cord. Among other products for which substantial projects were undertaken are: "Dacron" polyester fiber, titanium pigments, "Delrin" acetal resin, sodium, neoprene synthetic rubber, anhydrous ammonia, "Teflon" fluorocarbon resins, "Alathon" polyethylene resin, graphic arts films, and "Butacite" polyvinyl butyral sheeting.

• More East-West Trade

TRADE between the Free World and Soviet areas has increased rapidly, USDA reports. The volume was less than five percent of world agricultural trade in 1957; but Free World exports to Red China and Soviet countries more than doubled from 1953 to 1957. Cotton has been the Free World's biggest export to Iron Curtain areas since 1955. Shipments rose from 700,000 bales in 1955-56 to 1,300,000 in 1957-58. Current exports will be larger.

Exports of fats, oils and oilseeds to Soviet areas were valued at $90 million in 1957, $59 million in 1956, $81 million in 1955, $109 million in 1954 and $24 million in 1954, (when the figures were incomplete) USDA says.

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• Feeding of Sorghums To Be Encouraged

OPPORTUNITIES in feeding grain sorghums in West Texas were stressed March 2-3 at an Amarillo meeting and plans made to develop and distribute information to encourage efficient utilization of grain sorghums in livestock rations.

Dr. James Hildreth, regional research coordinator for the Texas A&M College System was named chairman and Kenneth O. Lewis, field representative, National Cottonseed Products Association, was named secretary of a fact-finding committee.

Lewis and C. B. Spencer, agricultural director, Texas Cottonseed Crushers' Association, were among those attending the meeting.

Bob Delk, Retired Murray Employee, Dies March 5

W. R. "Bob" Delk, longtime employee of The Murray Co. until he retired, died March 5 in Atlanta. He was 81.

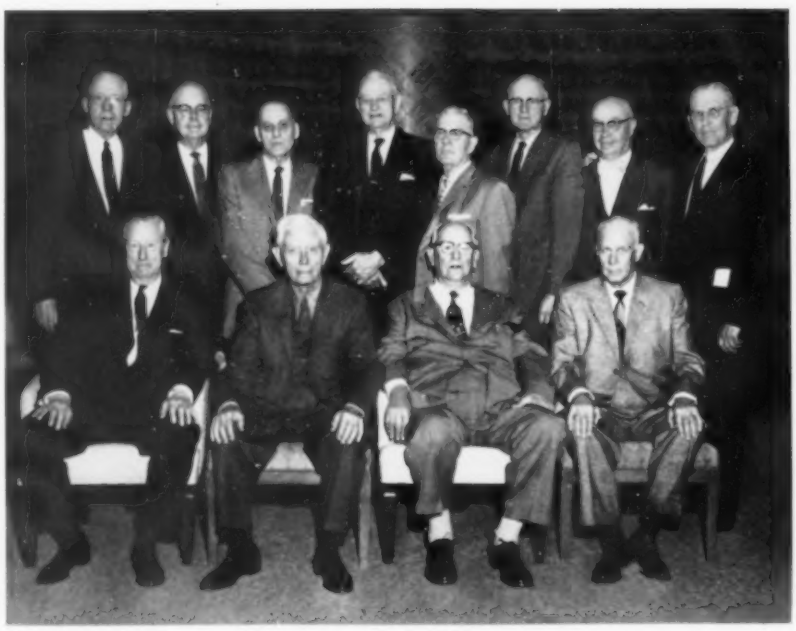
Delk started work with Van Winkle Gin Co. in Atlanta and remained with Murray when this company was bought by Murray in 1912. At various times Bob Delk travelled the entire Southeast for Murray, but was best known in Georgia where he spent most of his years with the company.

While he retired from active service at the age of 70, he continued to be interested in all of his ginner friends and will be greatly missed at the convention which he attended in Atlanta.

He is survived by his wife, four daughters, one son and several grandchildren.

Shippers To Hear Rhodes

F. Marion Rhodes, USDA Cotton Division, will be guest speaker April 9-10 at the Western Cotton Shippers' Association meeting at Las Vegas, Nev.



Young in Heart Get Together in Dallas

OLD TIMERS in the oil mil industry who are still young in heart got together Friday the Thirteenth of March in Dallas. They lunched and enjoyed tales of earlier days. Shown in the picture are the following, with the year in which they joined the industry shown in parenthesis: Seated, left to right: J. W. Simmons (1902), S. W. Wilbor (1903), John G. Puterbaugh (1912), T. J. Harrell (1916). Standing are Dick Rayburn (1910), Joe Flaig (1912), S. J. Vaughan (1923), A. L. Ward (1926), Jas. R. Gill (1917), B. B. Hulsey (1914), Louis Tobian (1915) and Richard Haughton (1930). Tobian was host for the occasion.

The group enjoyed the following anonymous poem, read by Puterbaugh:

IT CAN HAPPEN, YOU KNOW

When I was young and my shoes were red
I could kick my heels right over my head.
When I was older my shoes were blue
But still I could dance the whole day through.
Now I am old and my shoes are black
So I walk to the corner and puff my way back.

The reason I know that my youth is spent—
My get up and go has got up and went.
But still I don't mind as I think with a grin
Of all the grand places "my get up" has been.

Since I have retired from life's competition—
I find every day an exact repetition.
I wake in the morning and dust off my wits—
Pick up the paper and read the obits.
If my name is missing and I know I'm not dead—
I eat a good breakfast and go back to bed.

Fewer Acres in Oilseeds

Farmers intend to plant fewer acres of soybeans, peanuts and flaxseed, despite increases in other acreages, USDA reported March 19. Intended soybean plantings are about seven percent below last year, and will total 23,172,000 acres.

Appointed by Purina

Ralston Purina Co., St. Louis, has named Wayne E. Tjossem manager of its new soybean division. He will be responsible for Purina soy products except oil and meal. Tjossem was formerly with Central Soya Co.

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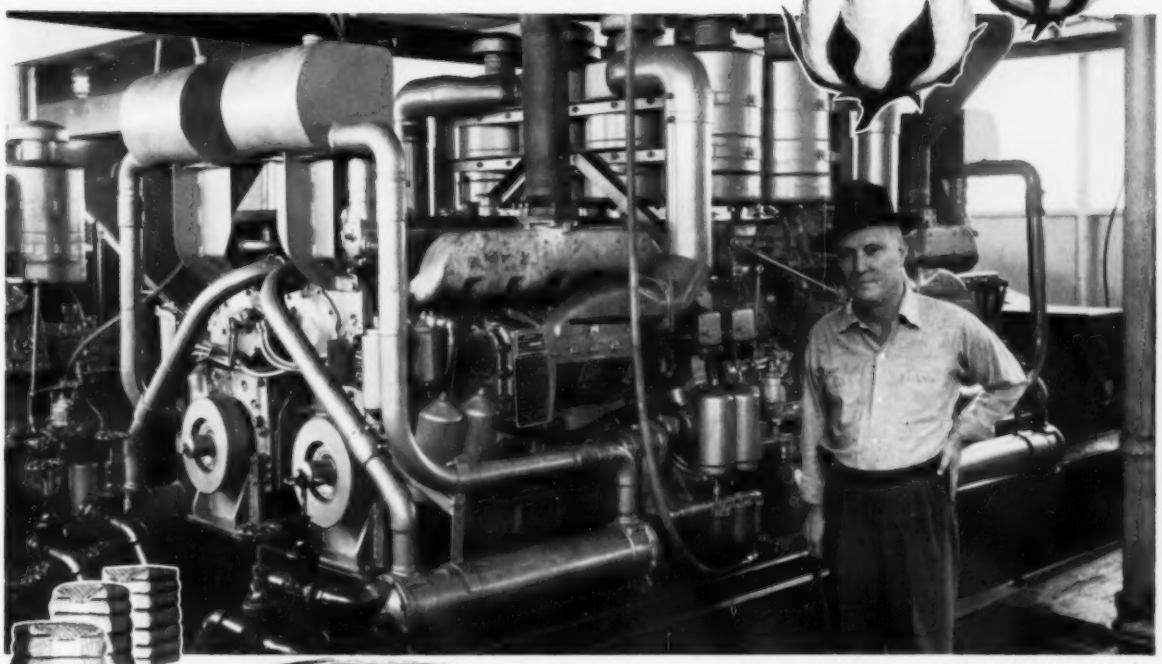

The Stewart & Stevenson GM 6-110 Quad. It is adaptable to either diesel fuel or gas (dual fuel).

the right engines for ginning are labeled "Stewart & Stevenson"

In ginning and in allied fields, power must be PRECISE, DEPENDABLE AND ECONOMICAL. That's why diesel or gas engines from Stewart & Stevenson fill the bill all the way. For example, there's the new Model 6-110 GM Quad which delivers smooth power up to 1000 continuous h.p.

This new concept by Stewart & Stevenson offers the maximum in reliability. With the new Stewart & Stevenson GM Diesel or Gas Quad arrangement, you can have the economy of Gas or Diesel power plus the maximum in dependability. These dependable power units have their own "built in" standby. For example, if one bank of cylinders is down for any reason, there is still sufficient reserve power to permit repair of the unit without loss of power to the ginning operation.

Besides all this, it carries the lowest price tag of any conservatively rated, normally aspirated, engine unit in its Horsepower class.

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• ACMI Convention Elects Officers

JAMES A. CHAPMAN, president of Inman Mills with plants at Inman and Enoree, near Spartanburg, S.C., was named president of the American Cotton Manufacturers' Institute, central trade association of the textile industry, at the annual convention at Palm Beach, Fla. Halbert M. Jones, president of Waverly Mills, Inc., Laurinburg, N.C., is the retiring president.

Chapman has the distinction of being the first man in history to have served as president of his state textile association (South Carolina Textile Manufacturers' Association); the Southern Textile Association, an organization of production executives, and the American Cotton Manufacturers' Institute.

J. M. Cheatham, president of Dundee Mills, Inc., Griffin, Ga., is the newly elected vice-president of the Institute, which represents the cotton, man-made fiber and silk segments of the nation's textile manufacturing industry.

Cheatham, who has been chairman of ACMI's Foreign Affairs Committee, was president of the Cotton Manufacturers' Association of Georgia (1952-53) and treasurer of the Textile Education Foundation, Inc., (1957-58). He is a former member of the ACMI board of directors.

The past presidents of the organization were honored on the first day of the convention, which celebrated the 10th anniversary of the Institute. The convention was held March 19-21.

Past presidents honored include Ellison S. McKissick, Alice Manufacturing Co., Easley, S.C., first president; George P. Swift (1950-51), Muscogee Manufacturing Co., Columbus, Ga.; Charles C. Hertwig (1951-52), Bibb Manufacturing Co., Macon, Ga.; W. A. L. Sibley (1952-53), Monarch Mills, Union, S.C.; H. K. Hallett (1953-54), Cotton Mills Division, Kendall Co., Charlotte, N.C.; J. Craig Smith (1954-55), Avondale Mills, Sylacauga, Ala.; A. K. Winget (1955-56), American and Efird Mills, Inc., Albemarle, N.C.; F. E. Grier (1956-57), Abney Mills, Greenwood, S.C., and L. G. Hardman, Jr. (1957-58), Harmony Grove Mills, Commerce, Ga.

JAMES A. CHAPMAN

The effects of new cotton legislation, a high priority topic in the textile industry, was the subject of a panel discussion at the session Friday afternoon, March 20.

J. M. CHEATHAM

Panel members included C. A. Cannon, president of Cannon Mills Co., Kannapolis, N.C., and chairman of ACMI's Cotton Policy Committee; R. Houston Jewell, vice-president of Crystal Springs Bleachery, Chickamauga, Ga.; J. Craig Smith, president of Avondale Mills, Sylacauga, Ala., and W. Gordon McCabe, vice-president, J. P. Stevens and Co., Inc., Greenville, S.C.

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DALLAS, TEXAS

On Texas High Plains

Farmers' Union Seeks Safflower Oil Mill

Plans for a safflower oil mill in the South Plains-Panhandle area of Texas, have been approved by the executive board of the Texas Farmers' Union.

The exact site of the safflower oil mill was not determined, but it was agreed that the plant will be located either on the South Plains or in the Panhandle, with construction to start in 1960.

Farmers Union members met with the executive board, Feb. 26, to hear reports on the potential of safflower as a new crop for Texas farmers.

The oil mill would be owned jointly by the TFU and the Safflower Oil Corp., headquartered near Boulder, Colo. Fifty-one percent of the stock will be owned by the TFU and 49 percent by the Safflower Oil Corp.

(Editor's Note: Safflower will grow on the Texas High Plains and new varieties may increase yields. Observers familiar with past history of this crop point out, however, that insects, unfamiliarity with crop practices and other factors, as well as relative yields and supplies of other oilseed crops, including soybeans and sesame, should be taken into consideration in planting safflower or any new oilseed.)

Board members of the Safflower Oil Corp. agree to solicit plantings of a minimum of 20,000 acres for 1960. Planting seed will be distributed this year, but the first crop will not be produced until 1960. The program will be explained at a series of meetings over the area starting in mid-March.

New Bulletin

1959 SOYBEAN BLUE BOOK IS NOW AVAILABLE

The new Soybean Blue Book for 1959, published by the American Soybean Association of Hudson, Iowa, is now ready for distribution, according to George M. Strayer, executive vice-president.

The Blue Book contains many statistical charts and tables, as well as listings of processors, refiners and manufacturers, both foreign and domestic, and other information of interest to the industry.

Louisiana Crushers Hosts

Seventy-one persons were guests of Louisiana Cottonseed Crushers' Association on March 13 at the traditional steak dinner for Louisiana State University leaders. Dalton E. Gandy, NCPA field representative, works with crushers in arranging the dinner, held annually during the LSU Livestock Show.

Crushers attending this year included C. W. Wallace and Foster Wallace, West Monroe; Maxwell Yerger and L. Duke, of Tallulah; H. L. Taylor, Shreveport; Jules Cazayoux, New Roads; and F. L. Morgan and M. J. Kehoe, New Orleans.

Soybeans for Northwest

Soybeans will yield up to 40 bushels per acre and are a promising crop for irrigated land in Oregon, reports Oregon State College.

• This is the difference pre-emergence weed control with "Karmex" DL makes. Note clean rows of cotton from band treatment; middles were untreated.

For low-cost pre-emergence weed control in cotton . . . use Du Pont Karmex® DL
diuron herbicide

"Karmex" DL, fully recommended by experiment stations, can help you lower production costs. Be sure to use it this season—and get all of these advantages.

- **Controls weeds and grasses up to 8 weeks**—permits better growth, higher production.
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- **Excellent insurance against a wet year** when weeds cannot be removed by other means.
- **Easy to use**—you plant and treat in one operation; no great hazards resulting from volatility, flammability or toxicity.

Always be sure of a good stand—plant seed treated with CERESAN®
Formulations of Du Pont "Ceresan" seed disinfectants protect seed against disease before and after planting—including seed decay, damping off and seedling blight. "Ceresan" assures better stands, bigger yields!

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diuron herbicide
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

TENNESSEE Ginners' Association leaders are shown here with their wives at the annual meeting in Memphis. Left to right are Waring Hazlehurst, new president; and Mrs. Hazlehurst; Mrs. Gauldin and John Gauldin, Jr., retiring president; and Mrs. Mann and Pat Mann, Jr., the new vice-president.

In Memphis, March 9-11

Midsouth Ginners' Meeting Stresses Cotton Quality

■ **EXHIBITS, entertainment and business sessions attract many to eighth annual Midsouth Gin Supply Exhibit. Officers elected.**

WIDESPREAD INTEREST in the numerous exhibits and good attendance at the business sessions and entertainment events highlighted the eighth annual Midsouth Gin Supply Exhibit in Memphis, March 9-11, at the Midsouth Fairgrounds.

"Midsouth Cotton — Today and Tomorrow" was the theme for the 1959 meeting, at which speakers emphasized the importance of meeting quality and price competition in order to hold markets for fiber from the area.

• **Officers Elected** — Two of the sponsoring organizations held business sessions at which officers were elected for the year.

Arkansas-Missouri Cotton Ginners' Association named Tom Murchison, Coy, Ark., president; Lon Mann, Marianna, Ark., first vice-president; and W. F. Sikes, Sikeston, Mo., second vice- president.

W. Kemper Bruton, Blytheville, Ark., is executive vice-president of the Association and in charge of the Midsouth Gin Supply Exhibit. Ross Hughes, Jr., also of Blytheville, is secretary.

Tennessee Ginners' Association chose Waring Hazlehurst, Bemis, as president. The new vice-president is Pat Mann, Brownsville; and Harold "Pete" Williams, Jackson, is secretary of the Tennessee group.

Louisiana-Mississippi Ginners' Association, which joins in sponsorship of the Memphis event, did not elect officers there. A meeting next month will choose officers and transact other business. John Carroll, Gilbert, La., is the current president.

• **Business Program** — Opening day speakers reviewed factors in the cotton situation that concern growers and ginners.

Dr. M. K. Horne, National Cotton Council economist, summarized the economic situation in the cotton world, saying that a temporary textile recession has reduced exports of the fiber from this country.

Hope for markets for 16 million bales or more was seen by the economist when this recession is over.

Victor L. Stedronsky, USDA Southwestern Cotton Ginning Laboratory, Mesilla Park, N.M., recounted his observations of cotton production and ginning on a trip to Russia. While the Soviets lag behind the U.S. in cotton technology, Stedronsky warned that they must be considered as an increasing factor in the world of cotton.

Quality factors, beyond those of grade and staple, are of increasing importance in the evaluation of cotton and competing fibers, Dr. C. R. Sayre, general manager of the Staple Cotton Cooperative Association, Greenwood, Miss., told the ginners and their guests.

He cautioned producers and ginners against harvesting and ginning practices which lower fiber quality and impair the usefulness of cotton to U.S. and foreign mills.

Speakers at the second day's business session also placed emphasis on good harvesting and ginning practices as related to the usefulness of cotton.

John S. Ross, USDA Marketing Research Division, Stoneville, Miss., discussed known facts about ginning influence on quality. (A similar discussion by Ross appears in the Western Cotton Production Conference report in this issue.)

J. M. Ragsdale, Missouri Extension ginning specialist, Columbia, Mo., gave ginners suggestions for improving cotton's quality position in 1959.

Claude L. Welch, director of the National Cotton Council Production and Marketing Division, outlined what cotton must do to solve its quality problem.

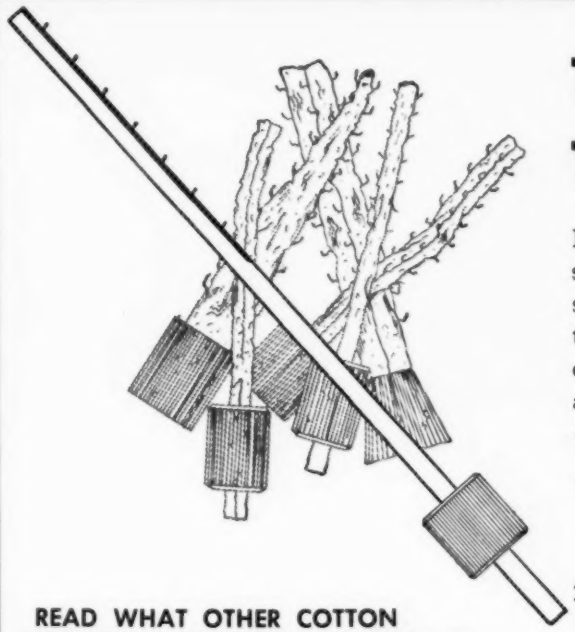
• **Entertainment** — Ginners, their families and guests enjoyed varied entertainment throughout the meeting.

Monday's events included a ladies' art tour and tea, a social hour, and dinner and dancing on the Peabody Hotel Skyway.

On Tuesday, there was a fashion revue and luncheon for ladies at the Peabody. Ginners' Night at Holiday on Ice at Ellis Auditorium was the final social event on the program.

Exhibits remained open Wednesday morning, and exhibitors expressed gratification at the attendance and interest in machinery and supplies displayed.

THESE SCENES were made at the annual meeting of Arkansas-Missouri Cotton Ginners' Association in Memphis. The photo on the left shows W. A. Joplin, Jr., Hayti, Mo., retiring president; Tom Murchison, Coy, Ark., incoming president; Bill Sikes, Sikeston, Mo., second vice-president; and W. Kemper Bruton, Blytheville, Ark., executive vice-president. Lon Mann, Marianna, Ark., first vice-president; and Ross Hughes, Blytheville, Ark., secretary, were not present when the picture was made. On the right, the picture shows new officers and their wives at the reception in their honor. Left to right, Murchison, Bruton, Joplin, Mrs. Joplin and Mrs. Murchison.



THE COTTON PICKING TRUTH ABOUT SPINDLES!

Mechanical picking is here to stay and so is the dry spindle. The American Cotton Manufacturer's Institute says: "Don't use mechanical pickers when the use of water will damage quality." This is another way of saying use only DRY spindles, because any machine that uses water will damage cotton.

These are the hard facts:

1. The only picker that picks DRY is one that has been modified with the patented La Rue DRY spindle.
2. The only spindle that will last the life of your machine, and can be renewed to "new" efficiency in the field at low cost is the La Rue.
3. La Rue DRY spindles were designed with a greater picking surface to use the full power of your machine. The retractable picking barbs release the dry cotton without twisting or tearing it. La Rue DRY spindles pick faster and deliver higher grade staple... no picker twist, trash or stain. La Rue DRY spindles are nickel plated at no extra cost and require no breaking in or polishing.
4. La Rue DRY spindles *cost less initially* than any other spindle on the market and are easier to install.

In other words, La Rue DRY spindles do a better job at lower cost. Isn't that worth some investigation on your part? If you are planning to buy a new machine, insist that it come equipped with La Rue DRY spindles... and if your old machine needs a new lease on life, equip it with La Rue DRY spindles.

READ WHAT OTHER COTTON GROWERS HAVE TO SAY ABOUT IT

I picked 55 bales of cotton with my one row AC picker equipped with La Rue Dry Spindles. After the cotton was defoliated ½ of my cotton was middling. I had very little breakage.
The gin man said it was the best machine picked cotton he had ever seen. It actually ginned better than most of the hand picked brought in. It has been one of the best investments I have ever made. We are now able to go to the field each day without a couple of hours down time straightening spindles.

(signed) N. R. Weatherall
Lutwiler, Miss.

A comparison between handpicked cotton and machine picked (dry, La Rue spindles) cotton, all picked at the same time, from the same plots all planted to Registered S-1 seed, from plants at the same stage of picking, and all ginned the same day revealed that the machine picked cotton brought 1.37 cents per pound more than hand picked cotton.
La Rue equipped machines are saving $40 per bale in picking costs, plus $6.85 per bale from grade improvement... a total of $48 per bale for the farmers pocket.

(signed) Marshall O. Thompson, Mgr.,
Co-op Gin Association,
Mesilla Park, New Mexico.

During the 1958 cotton harvest our two row Allis Chalmers picker, equipped with La Rue Dry spindles, picked 152 bales of cotton. The grade was middling and strict middling.
We are thoroughly satisfied with the La Rue Dry Spindles. Most gratifying was the complete absence of water on the La Rue.

(signed) Patrick W. Kelly Jr.
Kelly Ranch,
Corpus Christi, Texas

LA RUE DRY SPINDLES

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DEALERS THROUGHOUT THE COTTON BELT

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• Margarine Use Will Continue To Rise

MARGARINE SALES through food stores have grown at a substantially faster rate in recent years than have sales of most other major food commodities, Carl J. Weber, vice-president of A. C. Nielsen Co., Chicago, reported March 17. He predicted a continue gain in sales.

Per capita sales of margarine were up sharply in the past two years, with gains in almost all areas of the U.S., and reached an all-time high in 1958, Weber told the ninth annual Margarine Conference, sponsored by the National Association of Margarine Manufacturers, at Boca Raton, Fla.

From the retailer's standpoint, he stated, margarine's turnover is about two and one-half times as fast as the average turnover of other representative food store products, and its profit margin compares favorably with that of other grocery items.

"Margarine manufacturers are partners with soybean processors in processing and marketing the products of the soybean farmer and in serving the American consumer," asserted M. D. McVay, chairman of the board, National Soybean Processors' Association.

In 1958, McVay noted, the use of soybean oil in margarine exceeded one billion pounds, representing the oil from approximately 100 million bushels of soybeans. Margarine, he said, continues to provide the largest single outlet for domestic soybean oil.

"We face even greater problems and opportunities in the future," said McVay. "Assuming a continuation of present trends and barring war, inept Government programs which hamper rather than help, or a major depression, we believe the expanding demand for meat and poultry will require substantially larger amounts of protein feeds which, in turn, will lead to greatly expanded soybean production and a consequent increase in supplies of soybean oil. The marketing of this oil will require the cooperation of the soybean grower, the processor, oil refiners, margarine manufacturers, and the government."

Other speakers included Carl Heidrich, chairman of the board, Siert F. Riepma, president, and Ashley Sellers, general counsel, NAMM; Fred Smith, management consultant; Senator Barry Goldwater of Arizona; Arthur T. Schramm, Allied Chemical Corp.; and A. M. Gilbert, attorney.

Peanut Price $193.50

USDA has announced a national average peanut support price of $193.50 per ton. Non-recourse warehouse storage loans will be available to grower associations, and there will be farm storage loans and purchase agreements. Support last year averaged $213.20 per ton.

New South Carolina Mill

Southern Soya Corp. will soon start building a $500,000 soybean processing plant at Estill, S.C. The mill will be built by Stiles M. Harper and Grover F. Bowers, owners of grain elevators at Estill, Allendale, Sumter and Cameron.

Heads Compress Meeting

ZACH L. FELDER, president, heads the list of officers who have arranged the annual meeting and equipment show of the National Cotton Compress and Cotton Warehouse Association. The meeting will be held April 21-22 at Galveston. Leonard E. Read, president of the Foundation for Economic Education, will be among guest speakers, and varied entertainment features are planned. Officers include J. M. Cole, vice-president; John H. Todd, executive vice-president; Rufus Mock, treasurer; and Miss Louise Paine, secretary.

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RAPID DELIVERY SEED HOUSE—6 Doors on Each Side. Standard Sizes: 20-30-40 Tons or Larger Capacities.

BOTTOM DUMP BURR HOPPER—8 Doors. 25-35-45 Bale Capacities. Based on 500 pounds Burrs per Bale.

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USDA Bulletin Says:

Many Factors Influence Cotton Bale Covering and Sampling

IMPROVING BALE COVERING for cotton is a problem that will require the combined efforts of the entire cotton industry for its solution, USDA reports in a new bulletin. "Cotton Bale Coverings." Marketing Research Report No. 303 is available from USDA, Office of Information, Washington.

(Editor's Note: Bale coverings are related to the over-all problems of quality competition of cotton, currently being stressed by The Press. For related stories, see the Press Box column in this issue and articles in the March 7 issue.)

Ginners and manufacturers and distributors of bale covering materials provided information for the USDA study. This points out that coverings normally are in good condition when they leave the gins, but are later damaged by repeated cutting to remove samples of cotton. Also, rules of trading make it difficult to reduce the weight of the coverings (baggings and ties).

Many ginners said elimination or reduction of cutting of bales for sampling offers the best opportunity for improvement. A large number favored use of automatic samplers for this purpose, but some thought the sampler too expensive and complicated.

The study was made to provide information to the industry on the kinds of coverings and ties used, their weight, and problems involved in their use.

It was found that a little more than half the cotton during the 1957-58 season was wrapped in open-weave jute bagging, mostly new material. A little less than half was wrapped in sugar-bag cloth. The average weight per bale of the bagging was 11.8 pounds, and of ties 9.3 pounds, making a total tare per bale of 21.1 pounds. Average tare per bale, however, differed appreciably among states, ranging from 20.2 pounds in North Carolina up to 22.2 pounds in Mississippi.

Since bales are sold on the basis of gross weight, with a tare allowance of 4.4 percent, any reduction in the weight of bagging and ties below this allowable limit would make it necessary for the grower to include some cotton for which no payment would be received. Therefore, this trading custom imposes a serious handicap on efforts to reduce the weight of wrappings and ties.

Previous efforts to improve the bale wrappings have proved largely ineffective. The researchers hope, however, that their description of the problems involved may encourage further and more fruitful efforts.

American Oil Chemists Will Hear 59 Papers

Fifty-nine technical papers will be presented at the fiftieth anniversary meeting of the American Oil Chemists' Society, April 20-22 at the Roosevelt Hotel in New Orleans. C. L. Hoffpauir is general chairman and R. T. O'Connor, program chairman, both of the Southern Regional Research Laboratory, USDA.

The A. E. Bailey Award, honoring a former Society president, will be presented for the first time. V. C. Mehlenbacher, chief chemist, Swift & Co. will be the recipient.

The Society also has announced that the annual short course will be held Aug. 10-14 at the University of Minnesota; and the fall meeting will be held Sept. 28-30 at the Statler Hilton in Los Angeles.

Friendship Gin Re-elects

Two directors were re-elected recently at the annual meeting of Friendship Farmers Cooperative Gin, near Altus, Okla. They are Wendell Word and J. T. Cross. Other directors are Otis Whitworth, J. M. Waldroop, and S. W. Wright, J. G. Hudgens is manager.

About 200 members and their families attended the meeting in the Friendship High School Auditorium. T. J. Barton, fieldman, Producers' Cooperative Oil Mill, Oklahoma City, read and explained the audit.

■ **FRANK C. DANIELS, general sales manager, Commodity Stabilization Service, died suddenly while at his office March 2.**

Here's What Ginners Say About A & C Rubber Lined FAN SCROLLS and GIN ELBOWS

"These rubber linings are really tough. During the time we've used our present elbows, we'd have been down five or six times with unlined elbows."

BILL PERKINS, Mgr.
WIENKE GIN
PETERSBURG, TEXAS

"A rubber lined scroll was installed two years ago and is still in good shape. This is about three times the wear we'd get out of an unlined scroll."

D. T. PIERCE, Mgr.
PAYMASTER GIN
SNYDER, TEXAS

"Using unlined elbows, I've had gins down for replacement three and four times a season. With A & C elbows, I've gone as long as three years without changing."

J. E. GRAY, Mgr.
SLAYTON CO-OP GIN
SLAYTON, TEXAS

The experience of these three gin men with rubber-lined scrolls and elbows is being duplicated in gins all over the country. Every year, progressive gin operators are saving thousands of dollars in replacements and costly "down" time because of the amazing abrasive-resistant quality of rubber lining. In test after test, rubber-lined equipment has outlasted unlined equipment by as much as nine to one! Take the advice of men who know from experience. A & C rubber-lined scrolls and elbows put you 'way ahead in time, production and money. Order your next scrolls and elbows from A & C.

For complete information, contact your dealer or write:

ABRASION & CORROSION ENGINEERING CO.

P. O. Box 3085 Telephone DRake 6-5555 Amarillo, Texas

Classified Advertising

RATES AND CLOSING DATES: Ten cents per word per insertion. Include your firm name and address in making word count. Minimum charge $2.00. Copy must be in our hands by Thursday morning of week of issue. Please write plainly.

Oil Mill Equipment for Sale

FOR SALE—Wenger 1000 Hi Molasses Pellet Mill complete with cooler, pump, mixer, feeder, revolving duster, fan and motors; 36" and 42" filter presses; filter cloth washing machine; Buffalo cookers, DeLaval centrifuges, Zenith and Davenport dewatering presses; York ammonia compressors; Vogt oil chiller; scale tank complete with Toledo scale; Richardson scales; meal coolers; Roots-Connersville blower; Davis vertical mixer; horizontal mixers; O K bagging scale; Prater pulverizers; bucket elevator legs; pumps; motors. Contact Lee Atherton, Archer-Daniels-Midland Company, Minneapolis, Minnesota.

OIL MILL EQUIPMENT FOR SALE — Rebuilt twin motor Anderson high speed expellers, French screw presses, stack cookers, meal coolers, fourteen inch conditioners, filter presses, oil screening tanks, complete modern prepressing or single press expeller mills.—Pittock & Associates, Glen Riddle, Pennsylvania.

INSPECTIONS and appraisal. Dismantle and installation.—Oscar V. Shultz, Industrial Engineering, Phone BUtler 9-2172, P. O. Box 357, Grapevine, Texas.

FOR SALE—Filter presses, screening tanks, expellers, linters wood or steel, single and double box all-steel linter baling presses, Bauer #199 seed cleaners and separating equipment, 42" and 60" rolls, 30" to 48" bar and disc hullers, 72" and 85" stack cookers, various size filter presses, boilers, Roots blowers, hydraulic press room equipment, hull beaters, attrition mills.—V. A. Lessor & Co., P. O. Box 108, Fort Worth, Texas.

FOR SALE—2 French 4-cage screw presses 9" extensions, 75 h.p. motors. French screening tank. Filter presses. French 72" cooker Frenco Drive—72" cooker Hypoid Drive. D-K 5-high 90" all-steel cooker. Carver 141-saw linters. Bauer 199 seed cleaner. Bauer 198 hull beater. Butters 141-saw machines. Carver 48" bar huller. 36" attrition mills. No. 8 cake breaker. 2 single-box, up-packing, all-steel linter presses. Electric motors, starting boxes and switches. Steel sand and boll reel.—Sproles & Cook Machinery Co., Inc., 159 Howell St., Dallas, Texas. Telephone RI-7-5958.

HAVE giant-size Connersville Blower with fourteen-inch discharge suction same size. Will do fabulous job of moving grain fast. Will sell where is as is at a bargain price, ready to move.—Box 33, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

FOR SALE—One Muskogee type seedhouse, 100' x 170' in good condition, together with air machinery, truck and car unloaders. We purchased site but unable to utilize this building.—Merchants Company, P. O. Box 56, Jackson, Mississippi.

FOR SALE—1-100 h.p. and 1-80 h.p. Erie City boilers; 1-60 h.p. Cleaver Brooks package boiler. All three 150 lb. pressure with natural gas burners and auxiliary equipment, purchased new in 1949 and 1954. Used only a short time. Contact Lee Atherton, Archer-Daniels-Midland Company, Minneapolis, Minnesota.

Gin Equipment for Sale

FOR SALE—1-66" Mitchell Jembo; Hardwicke-Etter feeders with stick and green leaf machine built in; 80-saw Hardwicke-Etter gin stands; Hardwicke-Etter cleaners; 1-10' all-steel Hardwicke-Etter bur machine; Hardwicke-Etter burner. Fans of all sizes. One 3-80 Hardwicke-Etter gin complete. Four Hardwicke-Etter lint cleaners with all flues, 72" droppers. One Lummus steelbound, swinging door press, up-packing.—W. H. Ritchey, Bonham, Texas. Phone JU 3-2278.

FOR SALE 5-90 saw 1952 model Lummus gin stand and triple Thermex feeders. Two Super Jet cleaners. Equipment in first-class shape. Please contact Jimmie Sumpter, Manager, Happy Union Gin Company, Phone: TWilight 5-3341, Plainview, Texas.

FOR SALE—5-1953 model 66" Hardwicke-Etter cleaner feeders, one complete H-E lint flue. This machinery is in perfect condition.—Earth Co-op Gins, Inc., Jess O. Goode, Mgr., Box 377, Earth, Texas.

SOIL BANK VICTIMS—Modern gin machinery in Eastern States for sale. Contact me regarding used machinery or complete gin plants.—James C. Mann, Phone: 4931, Conyers, Ga.

FOR SALE to be moved — All-steel, 3-90 Cen-Tennial gin plant with Super Champ Mitchell feeders, two 24-shelf tower driers, Supermatic burner, two Murray overhead cleaners, Moss-Gordin steel, one-story down-packing press, electric power, f.o.b. gin site, located in Arkansas, $37,500.—Box EH, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

FOR SALE—One complete modern gin, with steel building, to be moved, price reasonable. Also several extra pieces of modern machinery such as droppers, condensers, packers, presses, and cleaner feeders. Contact Jim Hall, P. O. Box 751, or telephone RIverside 1-1393, Dallas, Texas.

FOR SALE—1958 Model LUMMUS COMBER complete. Operated one season. Make offer first letter. —Owens Co-op Gin, Ralls, Texas.

FOR SALE

Several LUMMUS COMBERS in good condition, with all connections, with or without motors. Will consider any reasonable offer. These units located in Arizona and California.

Attention dealers: Can offer drastic discount on 5 or more and can arrange delivery your destination.

P. O. Box 361 Phoenix, Arizona

FOR SALE—4-60" V-belt Super Mitchell feeders, 4-80 saw Murray glass front gin stands, 1 Murray PX steelbound press, 1 Cen-Tennial press pump, 1 all-steel distributor, 1 traveling suction pipe.—Latham Bros., Holland, Texas. Phone, Little River, YU 2-2351.

FOR SALE — One complete Continental 3-80 thoroughly modern gin for removal. All-steel down packing press, one set impact cleaners, seed scales, electric power. 1954 Continental lint cleaners. Priced reasonably.D. E. Stratton, Route 3, Pine Bluff, Arkansas.

FOR SALE

GINS—4-80 F3 Continental brush; 5-80 Continental Model C brush; 5-80 Continental Model C ABs; 3-80 Continental Model C brush; 1-80 Continental Model E brush; 12-80 Murray glass fronts; 10-80 Cen-Tennial glass fronts, loose rolls; 4-80 Cen-Tennial Commanders with loose roll; 4-80 Lummus automatic all-steel; 10-90 Gulletts; 2-80 Hardwicke-Etters.

HULLER CLEANER FEEDERS—10-80 V-drive 60" Super Mitchells; 5-80 Continental 4X; 5-80 Continental Double X; 4-80 Lummus MEFs; 5-80 Hardwicke-Etter with 4-cylinder after cleaner.

DRIERS—3 Murray Big Reels; 1 Mitchell Jembo, 6-cylinder, 66" wide; 3 Lummus Thermo; new tower driers at list price.

LINT CLEANERS—5-80 and 4-80, 1951 Model Hardwicke-Etters complete with lint flue, fans and motors. 5-80 Murray, 1951 Model saw type complete, 5-80 Murray ABC Jets complete; 1 Hardwicke-Etter, 1 Continental DFB comber.

CONVEYOR DISTRIBUTORS — 5-80 Continental; 4-80 Lummus.

PRESSES—1 Continental Paragon all-steel up-packing; 1 Murray all-steel downpacking; 1 Murray PX with steel platform; 1 Continental steelbound with wood platform.

PUMPS—1 Murray automatic; 1 Lummus; 1 Cen-Tennial; 1 Beaumier.

CONDENSERS—1 Hardwicke-Etter, 72"; 1 Continental, 72".

CLEANERS—1 Gullett 50" inclined 6-cylinder blow-in type; 1 Murray horizontal 6-cylinder; 1 Lummus 52" horizontal 6-cylinder; 1 Lummus horizontal 96" 6-cylinder; 1 Mitchell Jembo 6-cylinder, 66" wide; 1 Continental 4-cylinder inclined.

BUR MACHINES—2-10' steel Wichitas with two 3-cylinder after cleaners; 1-14' steel Stacy; 1-14' steel Lummus; 1 Mitchell Jembo; 1-14' Hardwicke-Etter wood.

SEPARATORS—2 Continental 52"; 1 Lummus 52"; 2 Gullett 52"; 2 Stacy 52"; 1 Murray 52".

FANS—From 20" to 50" diameters.

ELECTRIC MOTORS—From 3½ h.p. to 150 h.p.

MISCELLANEOUS ITEMS — 2 Continental automatic, even feed controls with overflow conveyors; 2 sets Fairbanks-Morse seed scales; 1-14' rotor lift; pulleys from 4" to 72" in diameter; floor stands, etc.

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FOR SALE—1-90 saw Hardwicke-Etter gin stand—has ginned 800 bales. One Continental 4X feeder.—H. C. Ritchey, Phone ESsex 7-2479, Frisco, Texas.

FOR SALE—5-70 Lummus stands, feeder, distributor, condenser, 5-drum Lummus aftercleaner bur machine, 5 fans, MM or Twin City engine. Complete or any machinery. — M. A. Holscher, Travis, Texas.

SPECIAL BARGAINS—One all steel up packing press with Murray tramper and pump. One all steel down packing Continental press with E.J. tramper and Hardwicke-Etter pump with V-drive. Twelve 80-saw late model Murray glass front gins. Steel bur machines: 2-14' left hand Hardwicke-Etters, with conveyors and troughs and 14' Murray 14' and 10' Lummus. Steel cleaners: 4-cylinder Continental 50" and 72" blow in type, 6- and 12-cylinder Stacy cleaner-drier combination. 4-cylinder 8' and 12-unit Lummus Thermos, 6-cylinder Hardwicke-Etter and Murray air lines, 7-cylinder Hardwicke-Etter V-belt blow in type and 9- and 14-cylinder Hardwicke-Etter type I, Murray lint cleaners. Mitchell convertible and super units in 60" and 66" lengths. Three 60" Mitchell Super Jems. S'x-stand Lummus and 3-stand Murray conveyor distributors. Continental and Murray press pumps. 15', 16' and 17', 9" screw elevators, 50" Hardwicke-Etter and 72" Continental separators. New tower driers. Stacy, Murray and Hardwicke-Etter heaters. New and used fans, belting, conveyor trough and a general line of transmission equipment. For your largest, oldest and most reliable source of used and reconditioned gin machinery, contact us. Call us regarding any machinery or complete gin plants which you have for sale or trade.—R. B. Strickland & Co., 13-A Hackberry St., Phone: Day or Night: PL-2-8141, Waco, Texas.

COMBERS

We have a few Lummus combers model "B" complete with grids. Bargain delivered to your gin.

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GINNERS—For any of your machinery or supply needs, from individual items to complete plants, or when you have machinery for sale or trade, contact us. Visit us at Booth No. 112 at the Texas Cotton Ginners' Convention in Dallas.—R. B. Strickland & Co., 13-A Hackberry St., Phone: Day or Night: PLaza 2-8141, Waco, Texas.

FOR SALE—4-80 Murray loose roll gins, roll dumps and 6" mote conveyor, lint flue, 4 Super Mitchells, Murray conveyor distributor—$1,800.—W. H. Ritchey, Bonham, Texas. Phone JU 3-2278.

FOR SALE—All-steel cleaners: 7-cylinder incline blow in, 6-cylinder horizontal, 7-cylinder incline, 5-cylinder incline. All-steel bur machines: 1-14' Hardwicke-Etter, 1-14' Lummus, 1-10' Wichita, 2-10' Continentals. Also: 1 Murray P.X. press steel deck, 1 Lummus packer, 30-h.p. electric motor, 2 Murray pumps, 5-stand conveyor distributor, 1-60" downdraft condenser, 70' elevator belt with 8" cups, 1-10' Continental steel brush. Many other items for your gin—gin stands, hangers, bearings, conveyor, pulleys, etc. Salesman on lot.—Spencer's Cotton Gin Sales & Service, Good Used Machinery for Sale, 5 Miles North Highway 81, Box 204, Georgetown, Texas.

FOR SALE—5 Murray ABC air type lint cleaners. This machinery in excellent condition. Reasonably priced. Address all correspondence to: Enterprise Oil Company, Enterprise, Alabama. Att.: Mr. Wilbur Warren.

FOR SALE—1-14' Murray bur machine, inlet and return conveyors, steel supports, C/S on rear wall. Two 7-cylinder Murray inclined cleaners with V-belt gang drives, for push and pull system, stacked, blow-in hood, vacuum hood, suction hoppers, steel supports. Equipment in good shape, can be bought for low price. Address correspondence to: Rhame's Gin, Holly Hill, South Carolina.

SACRIFICE Bargains—5-80 saw Murray gins. All new ribs. Cylinders in excellent condition. Extra cylinder included in lot. $250 each stand. —J. F. Taylor, Phone 2771, Louise, Texas.

FOR SALE—5 Master double X feeders complete with grid bars throughout, plus stick attachment on back. Will sacrifice.—Joe Reistino, Box 266, Mumford, Texas.

FOR SALE—One Continental steel press complete with pump, one Continental JE tramper, one set Continental seed scales, one Rilander seed sterilizer.—Farmers Cooperative Gin of Barstow, Barstow, Texas.

FOR QUICK SALE—Lummus comber complete with motors. Installed late 1957. Make us an offer. Contact Clyde Gault, Burdette Gin Co., Leland, Mississippi.

COMPLETE GIN—Six Lummus stands, extractor feeders, conveyor distributors, 12′ bur machine, drier-cleaner, scale, press, three electric motors with transformers, 125 h.p. Bessemer engine. All slightly used. Price $8,000. Also complete Lummus 5-80 stands gin, price $5,000. Both gins to be moved. L. L. Kolar, Flatonia, Texas.

FOR SALE—2 #18, grid type, Big Reel driers, in excellent condition, 1951 model. Contact Kerman Cooperative Gin, P. O. Box 667, Kerman, Calif.

FOR SALE—4-80 Lummus cotton gin, complete with drier and 6-cylinder LeRoi engine. Contact P. B. Paul, 2012 Park, Greenville, Texas. Phone GLadstone 5-3089.

SPECIAL BARGAINS

Two all-steel presses, tramperś and pumps. 80-saw rebuilt gin stands, 66″ Mitchell feeders, rebuilt and like new 4X Continental feeders at special discount, cleaners, bur machines and tower driers.

Convention Ginners: See Jack Dimon at Booth 9?—come by 3600 Commerce Street, or call TA 1-1410 for further information.

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DISMANTLING gin at Andice, Texas—20 ton 10 x 34 platform scale with 3″ oak floor bolted, $1,500. 5-stand Mitchell conveyor distributor with hoppers, $600. One D13000 Caterpillar engine with new factory heads, $1,500. 5 Special Super Unit Mitchell feeders, $750. 5 I.S. & B. Munger gins with aluminum brushes, $250. 1-45″ Boardman fan, $75. 1-30″ Murray cast iron fan, $75. 1-35″ Murray cast iron fan, $100. 1-11′ ram and casing, $200. One double hopper Fairbanks seed scale, $200. Single hopper Fairbanks custom seed box, complete with outside frame, $100. One Cameron packer, $50. 1-26′ Southwestern rotor lift, $275. One Murray VS dropper, $750. Call or write C. J. or C. G. Doering, Box 81, Georgetown, Texas. Phone 3114.

FOR SALE—4-80 saw, 1950 Model Lummus gin, 4 Lummus Super Jet lint cleaners, 4-66″ Mitchell Super Units, 4 Mitchell Super Jem Units with after cleaners. Tom Wade Gin Co., Kenton, Tenn.

FOR SALE—One Continental all-metal downpacking press with EJ tramper, one 60″ steel condenser.—Sumrow Gin Company, Halls, Tenn.

FOR SALE—5-80 saw Continental brush gins, 5-66″ Mitchell Super Units, one 72″ steel condenser.—L. Berry Gin Co., Holland, Mo.

FOR SALE—One Continental triple saw bur machine with separator and motor. Separate installation.—Gadsden Gin Co., Gadsden, Tenn.

FOR SALE—14′ Wichita bur machine with 3-cylinder after cleaner. Will sell separately. Complete, $1,000. 10′ Hardwicke-Etter wood bur machine with practically new brush, $250. 500′, 9″ conveyor @ $1 per foot. 250′ line shaft with bearings, $1 per foot. One steel belt distributor for 4-80 gin, $75. 4 Mitchell 60″ feeders in A-1 condition, $100 each. 1 steelbound Murray press with Murray tramper, $250.—W. R. Shipp, Priddy, Texas. Phone 21.

Used Equipment For Sale

24 Shelf Tower Driers, each	$1,200
14′ Murray Bur Machines, each	3,000
18″ Murray Hull Vacuum	150
72″ Continental Separator	650
Horizontal Murray Press Pump	850
Vertical Continental Press Pump	850
80-Saw Murray Mote Suction Gin Stands, each	900
20″ Phelps Fan	70
25″ Claridge Fan	95
25″ Murray Fan	150
30″ Continental Double Fan	275
30″ Continental Multi-blade Single Fan	210
35″ Murray Single Fan	246
40″ Continental Fan	290
40″ Claridge Fan	225
Continental Ram & Casing	850

Power Units—Electric Motors

½ h.p., 3 ph., 1750 RPM	20
¾ h.p., 3 ph.	30
1 h.p., 3 ph., 1720 RPM	45
3 h.p. Single Phase	120
5 h.p., 3 ph., 1725 RPM	95
10 h.p., 3 ph., 190 RPM	300

Engines

Le Roi D-1000, 100 h.p.	650
GMC 671, 130 h.p. Diesel	1,750

Wonder State Mfg. Co.

PARAGOULD, ARK.

MACHINERY at reduced prices—Gin stands: 4-80 saw F-3 Continental brush gins, 4-80 saw late model Murray with new ribs, 4-80 double moting automatic Lummus. Feeders: 4-67″ Continental Master double X, 4-60″ Super Mitchell, 4-66″ large Hardwicke-Etter with 4-cylinder after cleaners. Cleaners: One 4-cylinder airline complete with vacuum and transitions, 2-10′, 6-cylinder Continental inclines, one 6-cylinder Mitchell Jembo. Condensers: One late model 60″ Hardwicke-Etter, one square 72″ Continental updraft. Driers: One No. 18 Murray Big Reel. Incidental: Reworked gratefalls for 80- and 90-saw Continental gins, saw cylinders for 80-saw Continental and Murray gins, one Continental ram and casing with new by-pass head, one Murray ram and casing, Continental 12″ return conveyor. Various size fans and blast wheels. Presses: One Cen-Tennial, right-hand, uppacking, like new. Most of the above machinery has been completely reconditioned and painted.—Kimbell Used Gin Machinery Co., P. O. Box 456, Phone 3372 or 3351, Earth, Texas.

FOR SALE—4-80 saw Continental air blast gins in good condition. One Continental condenser.—Jack B. Taylor, Davisboro, Ga.

FOR SALE—3-80 saw Continental brush, all modern, all-steel gin with 2 driers, bur machine, 2 impact cleaners, Mitchell Super units, all-steel press with E.J. tramper. Excellent condition.—Estate C. E. Cloutier, Natchitoches, La.

FOR SALE—Complete gin plant with home, due to health complications. Will sell separately. Gin in good condition, located in Milam County. Complete with 14′ bur machine, drier, and electric power. Would like to sell before coming season. Price very reasonable. Will sell for small down payment and I will carry balance on notes. Write or contact Fritz Wied, Burlington, Texas.

This Week's Used Gin Bargain

3-80 saw Hardwicke-Etter all steel outfit with stub tower, inclined cleaner and all steel up-packing press, complete, only $7,650.

Sam Clements

Box 86 Phone RE 5-3764

West Memphis, Ark.

FOR SALE—One 8-cylinder Hardwicke-Etter cleaner—$800.—W. H. Ritchey, Bonham, Texas. Phone JU 3-2278.

FOR SALE—5-80 saw Murray gin stands, Murray steelbound press, Murray double chain tramper, 52″ Murray dropper, 12-cylinder Stacy cleaner, 2 Model H-2000 LeRoi engines.—John E. Kainer, Phone LI 3-3347, El Campo, Texas.

FOR SALE—2 million BTU oil fired Continental drier burner.—Swint Seed & Grain Co., Orchard Hill, Ga.

FOR SALE—One Big Reel Murray drier, fan, burner and piping—$1,200.—W. H. Ritchey, Bonham, Texas. Phone JU 3-2278.

FOR SALE—4-80 Murray gin plant to be moved. Excellent condition, operated in 1958. Electric powered. Price $7,500.—Marvin Mickan, Phone MO 7-2661, Copperas Cove, Texas.

FOR SALE—Priced for quick sale. Continental DFB lint cleaner complete, less motors. Excellent condition—P. O. Box 621, West Memphis, Ark.

FOR SALE—5-80 saw double moting Lummus gins and Thermex feeders. Equipment in excellent condition.—Lockney Gin Co., Lockney, Texas. Lester Carter, mgr., Phone OL 4-3388.

FOR SALE—1-66″ Mitchell Jembo machine, 1-72′ Continental Dropper, 1-72′ Lummus Dropper.—W. H. Ritchey, Bonham, Texas. Phone JU 3-2278.

All-Steel Bolted Gin Buildings in Stock, 36′ x 120′

We completely erect—

Call or write for any size gin building

Mitchell Steel Building Co.

P. O. Box 456—Carrollton, Texas

Phone 8651 Night—Dallas FL 7-6951

FOR SALE to be moved—Complete gin plant in good condition, including 5-80 Murray stands, Murray cleaners and drier, steel press, and Hardwicke-Etter bur machines.—Lawton Coop. Association, Lawton, Okla.

Equipment Wanted

WANTED—One Moss-Gordon lint cleaner, 12-shelf tower drier, and 3 Mitchell papoose units.—Box 26, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

WANTED—72″ Continental impact cleaner, 72″ inclined cleaner with blow box, by-pass and dropper, 72″ separator, screw conveyor suitable for 4-90 Murray gin stands.—Box GN, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

WANTED — Clipper cottonseed cleaner, portable electric bag closing machine and Gustafson or similar type dust treater; natural gas engine, 100-150 h.p.—Box JC, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

WANTED—One Moss Cleanmaster and two Moss Constellation lint cleaners or three Murray lint cleaners, used but in good condition.—Johnson Cotton Co., Dunn, N.C.

WESTERN OUTLETS—Used gin equipment for Western Buyers wanted. Complete plants or any gin equipment.—James C. Mann, Phone: 4931, Conyers, Ga.

Personnel Ads

WANTED—Superintendent for delta solvent extraction plant handling cottonseed and soybeans. Give experience and qualifications. Our people know of this ad. Applications confidential.—Box 75, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

EXPERIENCED gin manager wants year around job. Minimum 3,000 bales. Irrigated area preferred. —Box 463, Merkel, Texas.

AMERICAN engineer with broad experience in design, construction, operation and management of vegetable oil mills and cotton gins, resident of Mexico with permanent working papers, interested in any type work pertaining to oil mills or gins in United States or Latin America. Reply to Box MK, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

WANTED—Year-round job in a gin. 32 years old, sober, reliable, 13 years experience. References.—LeRoy Greer, 815 Whittenburg, Borger, Texas.

MANAGER of three large gins for 10 years wants Latin American or U.S. employment. Can erect gins, handle any gin machinery, buy and sell cotton. Excellent references.—Box 43, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

WANTED — 1-72″ Continental impact cleaner, 1-24 shelf tower drier, two Mitchell Vertimatic burners, Papooses and Super Champs. State condition and age.—TORREY WOOD & SON, Hollandale, Texas.

WANTED—Gin manager. Salary and commission. Contact Five-In-One Co-op Gin, Rt. 3, Vernon, Texas.

PARTNER WANTED—Silent or manager. $25,000 down. (5-80 F3 brush.)—J. R. Heard Gin, Box 29, Whitharral, Texas. Phone 3551.

Power Units and Miscellaneous

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services first. Contact your nearest branch.

CERTIFIED REX Cotton Seed. Proven new variety of cotton developed by the Arkansas Experiment Station. High yielder, resistant to bacterial blight and Fusarium wilt diseases and storm losses. Early maturity, big boll, good staple, high gin turnout. Matures ten days earlier than leading varieties of cotton.—Write for literature and prices. Sack to car loads.—Lambert Seed Company, Newport, Arkansas.

FOR SALE—(1) 150 HP New GE Slipring Motor, 3/60/440/720 RPM, Type M, Ball Bearing, Open Dripproof, $3,875.00 Net. (2) 200 HP New Master, Slipring Motor, 3/60/440/900 RPM, Ball Bearing, Open Dripproof, $5,130.00. — W. M. SMITH ELECTRIC CO., 3200 Grand Ave., Dallas, Texas.

FOR SALE—One 8 x 9 Twin City engine—$1,500.—W. R. Ritchey, Bonham, Texas. Phone JU 3-2278.

(More Classified Ads on Page 46)

New Folder

USE OF SEVIN ON COTTON IS DESCRIBED

A new folder describing the use of Sevin insecticide on cotton is now available from Union Carbide Chemicals Co., Division of Union Carbide Corp.

Advantages of Sevin are explained in the folder, including wide-range control, long-residual action, control of resistant insects, improved safety and storage stability. Major pests controlled by this new type of cotton insecticide also are listed.

Sevin is a carbamate, and is different from other pesticides currently on the market, the folder points out. Union Carbide recently announced that Sevin is commercially available this year to cotton growers for the first time.

Copies of the new folder may be obtained by writing to Crag Agricultural Chemicals, Union Carbide Chemicals Co., 30-20 Thomason Avenue, Long Island City 1, New York; or to The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26.

Gin Re-elects Chasteen

About 150 persons attended the annual meeting March 12 of Farmers' Union Cooperative Gin of Warren, at the Community House, near Blair, Okla. J. W. Chasteen was re-elected to the board at the business session.

Other directors are C. C. Biddy, Bill Hendricks, Lloyd Hunter and James Stockton. J. H. Brazell is manager.

As Luna Goes, So Goes Nation on Plan B?

No national figures will be available on farmers' choices of Plan A and Plan B cotton acreage until next week, as pointed out in other articles in this issue. At press time, however, a wire from Luna County, in New Mexico, reports an increase of 2,785 acres by 139 farms which chose Plan B and will plant 9,750 acres. In the same county, 151 farms chose Plan A and will have 6,207 acres.

Zach McClendon, Jr., Is Outstanding Student

Zach McClendon, Jr., Monticello, Ark., is an outstanding student at the University of Arkansas and will attend a conference in New York City, April 5-10. Zach, Sr., is president of Drew Cottonseed Oil Mill and vice-president of Valley Oilseed Processors' Association.

The younger McClendon will participate in Inside Advertising Week, sponsored by the Association of Advertising Men and Women and Advertising Club of New York.

■ **CLARK YAGER, manager of General Mills' soy division and feed procurement, will retire Sept. 1. ROBERT E. ALEXANDER will succeed him.**

• Georgia May Double Cotton Acreage

EVIDENCE that the Southeast has not lost interest in growing cotton, as some have said, is found in reports that Georgia may plant twice as many acres to cotton in 1959 as in 1958.

Georgia probably will plant over 600,000 acres to cotton, Extension Agronomist D. L. Branyon says. This compares with 388,000 last year out of an allotment of 905,387. This year's allotment is 859,600. Branyon commented that cotton makes more profit per acre for farmers than any other crop except certain specialty crops.

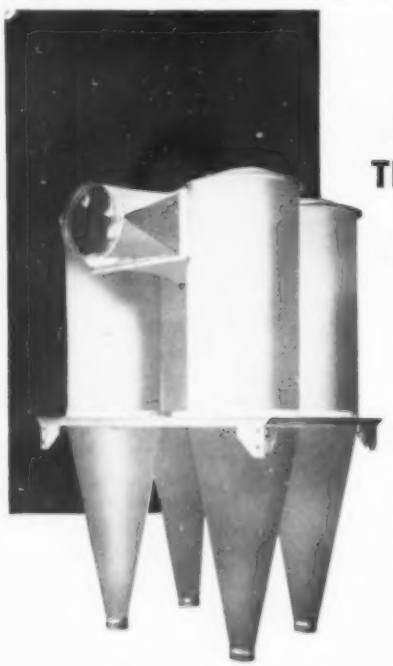
Contest Winners Honored

Winners in District 2, 4-H Club Cotton Contest received their awards March 14 at Lubbock. Plains Cooperative Oil Mill, sponsor, presented $800 in awards and was host at a luncheon. Extension Service conducts the contest and cooperative gins aid in county contests.

Canada To Use More Lint But Will Import Less

Canada may use slightly more cotton in 1958-59 than last season, but fiber imports and stocks will decline, USDA predicts. Improved consumer demand recently has reversed the decline in mill consumption that prevailed last season.

U.S. share of Canadian cotton imports dropped sharply last season and has continued to decline in 1958-59.



HIGH EFFICIENCY DUST COLLECTORS & TRAVELING TELESCOPES

PERFECTION IN TRAVELING TELESCOPES

STURDY STEEL TRACK
ANGLE RING CONNECTIONS
ALL METAL BOOTLESS TYPE SWIVEL HEAD
SEALED BALL BEARING ROLLER HANGER
ONE PIECE HORIZONTAL PIPE
TELESCOPE BARRELS UP TO 12 FOOT LENGTHS IN 1 PIECE
BALL BEARING ROPE PULLEYS

HIGH EFFICIENCY CYCLONE DUST COLLECTORS

To help solve your problems concerning dust and other gin waste . . . install HIGH EFFICIENCY CYCLONE DUST COLLECTORS. Small diameter cyclones are MORE EFFICIENT than large cyclones. However, because of their low capacity, multiple units consisting of 2 or 4 collectors must be installed in most cases.

This collector MUST BE PROPERLY SIZED: (Air Reading should be taken where possible) to do this, the size and make of fan, type fan blade, fan speed, diameter of pipe on discharge side of fan, and type of material the fan is handling must be known.

We highly endorse this collector.

ANDERSON & BIGHAM SHEET METAL WORKS, INC.
GIN, MILL AND ELEVATOR WORK
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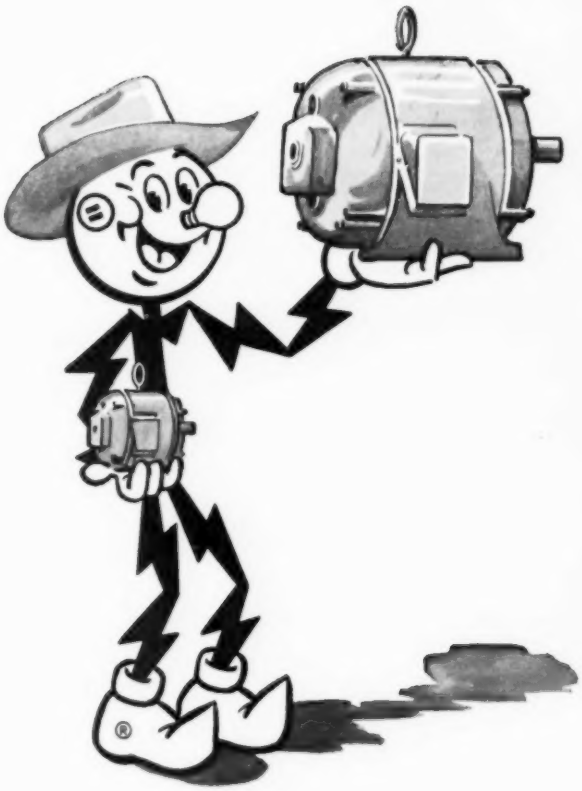


BIG OR LITTLE NEED FOR POWER?

Perhaps you need Reddy Kilowatt for just a one horsepower job . . . or maybe you need him to power that big 500 H.P. motor load in your cotton gin . . . he's right there 24 hours every day to lend you a hand. Reddy serves you dependably whether the load is big or little . . . and he serves you economically, too. Look around your plant and see how many ways Reddy can help you modernize.

CONSULT TP&L ENGINEERS . . .

They'll be pleased to discuss any power problem concerning your business in the Company's service area . . . advising you regarding the efficient, economical use of electricity in the cotton ginning industry.

TEXAS POWER & LIGHT COMPANY

from our Washington Bureau

by FRED BAILEY
WASHINGTON REPRESENTATIVE

The Cotton Gin and Oil Mill Press

• **Plan A Cotton Sales** — USDA plans a program to sign up ginners, warehousemen, buyers and farmers' co-ops as CCC "agents" to purchase cotton grown under Plan A.

Details aren't worked out yet and no one is to be offered a contract until about May, but we can give you at least the highlights of what's planned.

Farmers growing Plan A cotton will handle their crop much as they have in the past when taking out a loan. That is, it's up to them to arrange for ginning and warehousing.

Under the plan being considered, the gin, co-op, or whoever buys cotton from the farmer, will pay Plan A purchase rate and then apply to CCC for reimbursement.

In addition to reimbursement, CCC will pay an agent's commission—so much per bale. Amount of the commission has not yet been decided, but under similar programs in the past it has been about 50 cents to 75 cents a bale. We think it will be in this neighborhood again.

There are two reasons why USDA considers using gins, buyers, co-ops, warehousemen, etc., as "agents." First, "It's the only practical way to do it . . . a lot simpler than having each farmer applying directly to CCC for payment and all the paperwork that would be involved." Second reason given is that any other kind of program would work a financial hardship on many local businessmen who are already set up to buy cotton. A program under which CCC handled the whole deal might force many of these businessmen out of business entirely.

• **Acreage Secrecy** — A final announcement of the number of acres signed up under the Plan B cotton program is planned tentatively for March 25.

CCC officials say that local ASC offices will be authorized to release details on that day or on the day following. At present, local officials are under strict orders from Washington not to give out any information on the size of the Plan B sign up. (See related story.)

• **Battle on Braceros** — The controversial battle over regulations governing employment of seasonal workers is due to come to a head late next month. Final proposals by Department of Labor will be issued April 30 and public hearings are tentatively set to get underway around June 1.

Despite several concessions, employers still term the proposed federal regulations "vicious and unnecessary." The battle ahead will center around these two points:

HOUSING STANDARDS — Employers groups argue that improvements are rapidly being made under the present "structure of government regulations" and that further regulations at this time are not necessary . . . not desirable.

TRANSPORTATION — Objection is particularly to those proposed rules which would require employers to give preference to domestic workers and to pay to and from transportation costs when such workers are "available within a reasonable distance."

Two Senate bills could also have an important effect on farm labor, and on labor hired by rural businessmen. One by Senator Kennedy would increase the present $1 an hour minimum wage to $1.25 an hour.

A second bill, by Senator McNamara would extend minimum wage and maximum hours regulations to hired farm workers. Here are the details: Minimum wage for farm workers would be 75 cents an hour the first year, 85 cents the second, $1 the third and the national minimum wage (whatever that might be) the fourth year. Only farm employers hiring 2,244-man-days of labor a year . . . the equivalent of seven full time employees . . . would be regulated.

But don't be misled by the limitations in the McNamara bill. If even a few large operators were forced to boost wages, the pay scale for the whole community could be affected. Smaller-scale employers would also have to set their wages in line or run the risk of losing workers. Non-farm employers in rural areas would also have to be competitive, wagewise.

These laws won't pass this year in our opinion. But with liberals in control of Congress, they stand a good chance of becoming law sooner or later.

Also in the wage-labor field: At its recent meeting in Puerto Rico, the AFL-CIO passed a resolution authorizing the spending of "an unlimited amount" to launch an all-out effort to organize farm and other rural workers.

• **Benson on Defensive** — There's an important shift in farm policy thinking—and action—on Capitol Hill. A shift so gradual that some members of Congress taking part have been slow to recognize it.

For the first time in six years, Benson is on the defensive. Sure, he's been sniped at in the past—almost without let-up. But all along he's been making real headway in getting his proposals written into law, and in discrediting "New Deal-type" farm legislation.

Now the situation is reversed. Congress is taking the initiative. Three-fourths or more of all new bills under study by congressional committees are Democratic-bills. Benson-backed bills are allowed their hearings and USDA officials are given a chance to speak, but that's the end of it.

CLASSIFIED ADVERTISING

(Continued from Page 43)

FOR SALE—One Le Roi L3000-RXISV 12-cylinder 300-350 h.p. Cotton gin equipped, guaranteed in operating condition. Priced low to move. One General Motors diesel twin—6-cylinder, cotton gin equipped, guaranteed in operating condition—300 h.p. @ 1800 RPM. Priced low to move. One Minneapolis-Moline Twin 6 Model 1210-12A, cotton gin equipped, guaranteed in operating condition—200 h.p. Priced low to move.—W. M. Smith Electric Company, HAmilton 8-4606, 3200 Grand Avenue, Dallas Texas.

FOR SALE—1959 edition of the "Tennessee Cotton Ginners Directory." This directory lists the cotton gins and the owners or managers of the gins in Tennessee and Kentucky. Published by the "Tennessee Cotton Ginners Association." Price $5.00 per copy. Send check or money order made payable to "TENNESSEE COTTON GINNERS ASSOCIATION." Box 392, Bemis, Tennessee.

SALES—Service—Repair—Installation—All makes of scales. Used scales taken on consignment.—Industrial Scale and Equipment Co., Phone OR-4-2588, 7014 Force St., Houston, Texas.

WANTED—MM engine, 8 x 9, 4- or 6-cylinder. Send price, condition, and location.—The Thomas Gin, Magnolia, Ark.

FOR SALE—PC-2505 engine in good condition. No radiator for it—we used a tower cooler.—Farmers Union Coop Gin, Box 185, Willow, Okla.

FOR SALE—One 34' Howe scale with weightograph, capacity 56,000 pounds. Also several smaller scales in perfect condition. Guaranteed scale service anywhere, anytime. Call or write Lewis Scale Service, Clarence E. Lewis, 1609 42nd Street, Lubbock, Texas. Phones SHerwood 4-7489 or SHerwood 4-3760.

• Mill Buyers Plan Joint Meeting

COTTON BUYERS representing 90 percent of the U.S. cotton textile industry will meet in Atlanta, May 20-21.

Frank L. Carter, secretary, Cotton Manufacturers' Association of Georgia, said that cotton buyer groups from Georgia, Alabama, North and South Carolina will have about 500 mill representatives and guests at the first joint meeting in the Southeast. Sessions will be at the Dinkler-Plaza.

The program on May 21 will consist of individual meetings of state groups and a general session at which reports will be made on the following topics of cotton buyer interest: trading and rules; ginning; arbitration; legislation; cotton growth, variety and quality; and grade and preparation.

Robert C. Jackson, executive vice-president American Cotton Manufacturers' Institute, will be the principal speaker on May 22. State groups will hold business meetings that day for the purpose of electing officers for the following year. A reception, banquet and dance are scheduled that evening. Friends in the cotton shipping and textile waste trades may obtain reservation forms by writing to Cotton Manufacturers' Association of Georgia, 740 C & S National Bank Building, Atlanta.

Cotton Variety Report

"Cotton Variety Tests in New Mexico" is Research Report No. 23, available from Office of Information, New Mexico State University, State College, N.M.

Fewer Pesticides Stocked

Carryover stocks of pesticides are about 10 percent smaller than a year ago, USDA reports.

60 YEARS OF SERVICE
THE COTTON GIN and OIL MILL PRESS
1899-1959

Head of California Firm Says Future Of All Depends on Free Enterprise

CALIFORNIA COTTON OIL CORP. was organized in Los Angeles in 1918, primarily for the purpose of crushing copra. The present Expeller room in the plant at Los Angeles is part of the original building, built in 1918.

In the early 1920's the plant was enlarged and equipped with the machinery necessary for crushing cottonseed. Thereafter, during the "frenzied business excitement of the late Twenties," present officials of the firm point out, "the tracings of the company's history are faint and, at times, indistinct.

"At one point a promoter, with more interest in expansionist ideas than in sound operations, arrived on the scene. The ultimate result was an amalgam of companies, including a number of cottonseed crushing plants located in San Diego, Los Angeles, Corcoran and the Imperial Valley of California; and in Phoenix and Yuma in Arizona. There also were gins throughout California, central and western Arizona and Lower California, Mexico.

"In 1930, there began the long and difficult task of straightening out the company's tangled affairs. This required nearly 15 years, so that it was not until 1945 that the company was transformed into a sound and strong concern, with one large crushing plant, in Los Angeles."

Two presidents of the firm during these latter years—the late W. B. Coberly, Sr., and the current president, W. B. Coberly, Jr., have served as president, also, of the National Cottonseed Products Association.

Cottonseed has been crushed throughout these years, although the volume at times has been small. This, company officials comment, included the early 1930's and World War II, when cotton and cottonseed in the U.S. were "held back as a matter of national policy, paving an easy way for that permanent displacement of cotton and cottonseed products by competing fibers, fats and feedstuffs which yearly grows larger."

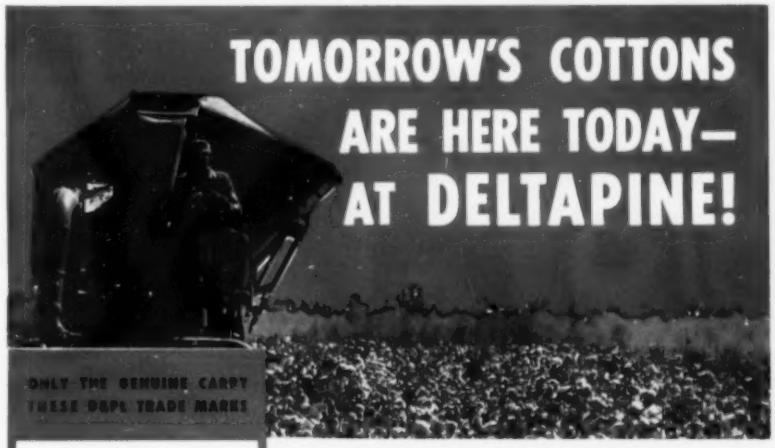
During this period, crushing of flaxseed and soybeans by the company and an affiliated firm, Pacific Nut Oil Co., rose to several times the volume of cottonseed crushed. Very large quantities of copra were crushed shortly after the end of World War II when cotton production had not been increased.

Although cottonseed has been crushed without interruption during the past 36 or 37 years, a great many other materials have also been crushed during that period. These include perilla seed; hemp seed; kapok seed; Argentine, Chinese, Indian and Mexican flaxseed; Indian and Chinese sesame seed; palm kernels from Africa and Sumatra; babassu kernels; safflower seed; and southern California walnuts — all of these being in addition to the copra and the domestic flaxseed and soybeans already mentioned.

"Now, however, the government, despite its good neighbor policy and despite the expenditure of billions upon billions of dollars to win friends and allies everywhere, has succeeded fairly well in driving enterprising individuals and firms from these fields of endeavor, so that today California Cotton Oil Corp. crushes only small amounts of domestic flaxseed and safflower seed in addition to cottonseed. And its affiliate, Pacific Nut Oil Co., now crushes nothing," officials say.

Since the growing of irrigated cotton in the Far West requires large amounts of both fixed and operating capital, the crushing of cottonseed has always been related to crop financing and to cotton ginning.

California Cotton Oil Corp. is no exception in this regard. Early in its life



ONLY THE GENUINE CARRY THESE D&PL TRADE MARKS

BREEDER'S REGISTERED
DELTAPINE 15
Very Adaptable
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BREEDER'S REGISTERED
FOX 4
(SOLD OUT)

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(SOLD OUT)
Ideal for Mechanization
DELTAPINE SMOOTH LEAF

For 43 years the dedicated men at DELTAPINE have been scientifically breeding cotton with one purpose in mind — to produce constantly improved varieties that will stay a step ahead of the requirements of the farmer, the ginner and the mills.

Experienced, profit-conscious farmers have learned they can depend on DELTAPINE Cottons, crop after crop, to produce record breaking yields . . . . high lint turnout . . . . and most important, TOP QUALITY cotton that brings TOP PRICES.

Proof of this is the fact that almost one-third of all U. S. cotton acreage is planted with DELTAPINE varieties.

Join this throng of happy cotton farmers. Renew your seed in '59 — cash in on DELTAPINE.

Reserve your D&PL seed now!

DELTA & PINE LAND CO.

Scott, Mississippi Brownsville, Texas

DELTAPINE (D&PL) COTTONS

BETTER SEED for BIGGER CROPS and BETTER PRICES

Ginners Encouraging "B" Plan Choice

Ginners in many parts of the Cotton Belt have actively worked to encourage farmers to choose "Plan B" in planting 1959 cotton. In some areas, ginners are pledging a certain price for growers who make this choice. For example, ginners throughout Tennessee counties of Carroll, Gibson and Weakley have agreed to contract Middling 1-1/16 inch, hand-picked cotton at 32 cents a pound or higher. Growers must sign the contract by April 1 and agree to plant under "Plan B."

it operated a substantial number of gins, but in recent years the ginning business has been a smaller part of its operation. Some farming operations are included, and for 30 years the company has operated a custom cattle feeding business. The latter is no longer the noveity it was only a few decades ago; in California a custom feed yard is to be found almost as frequently as the service stations on a highway. Nevertheless, of the company's several yards, those in the central industrial area of Los Angeles having a capacity for some 8,000 head of cattle, probably are unique in that they exist in the very center of an urban area of 5,500,000 people. The reason for this arrangement is the existence of feed yards, storage buildings, and mixing plant in close proximity to some 60 meat packing firms.

"Will California Cotton Oil Corp. ever celebrate a Sixtieth Anniversary, as the Cotton Gin and Oil Mill Press is doing this year," W. B. Coberly, Jr., president of California Cotton Oil Corp., asked when requested for information about his firm.

"That would be adding 20 years to our firm's present existence. In 20 years can we be assured of steering a safe fiscal course while at the same time finding and making effective some scheme for retiring the government from its destructive intervention in cotton's welfare and in our business and personal affairs generally? These are the questions which should be uppermost in the thoughts of anyone contemplating the next several decades.

"Indeed, it is these questions and the seeking of answers to them which occupy the principal time and energy of most people in the cotton and cottonseed business, or should. Other businesses, too, face these same problems, although they may not be as apparent as in the cotton business."

• Taylor Heads Texas Cotton Association

FREE ENTERPRISE and free competition for U.S. cotton were emphasized in addresses and resolutions at the annual meeting of Texas Cotton Association, March 13-14 in Dallas.

A. Starke Taylor, Jr., Dallas, succeeds W. R. Wilson of Greenville as head of the state organization of cotton merchants and allied interests.

Retiring President Wilson praised the work of committee members, mentioning Jack Stoneman and Burris C. Jackson; and of the Association's administrative officers, L. T. Murray and Roy Barzak.

Wilson called upon the Association to strive for a policy which will:

"Permit our cotton to compete for the markets of the world on the basis of price and quality,

"Permit our cotton to sell competitively in both the domestic and foreign markets under a one price system,

"Give the cotton producer the privilege of managing his own affairs without government hindrance, and

"Preserve private enterprise and the time tested traditional American free marketing system based on just rewards for faithful and efficient services performed."

Resolutions later adopted urged a one-price system for cotton, at home and abroad; free marketing through normal trade channels; and production to meet mills' needs.

Guest speaker was Edmond F. Ebert, vice-president, Bankers Trust Co., New York. He discussed the immediate outlook for cotton and the economy, then warned of the threat to the U.S. from Soviet economic warfare.

Directors of Crushers Will Meet in Dallas

Directors of Texas Cottonseed Crushers' Association will hold their spring meeting April 4 at the Statler Hilton Hotel in Dallas. Managers of oil mills who are in Dallas for the Texas Cotton Ginners' Association convention, which opens the next day, are invited to the board meeting.

Gossypol Research Studied

Gossypol research was reviewed and future plans made by research workers at a conference in New Orleans, March 19-20. USDA and state experiment station scientists discussed the problem of gossypol in cottonseed products with representatives of the oil mill industry. National Cottonseed Products Association, National Cotton Council and USDA sponsored the meeting.

THE key TO GREATER EFFICIENCY AT LOWER COSTS
• MECHANICAL SCREW PRESSES
• SELF CONTAINED COOKER-DRYER
• SOLVENT EXTRACTION PLANTS
• FLAKING AND CRUSHING ROLLS
FRENCH
THE FRENCH OIL MILL MACHINERY CO.
PIQUA, OHIO

Samuel G. Jackson

(Continued from Page 30)

humidifier settings accordingly.

The humidifier shown in the illustrations was operated successfully this past December at Roswell, N.M. It increased the moisture content of the fiber in the unginned seed cotton by two to three percent without causing any difficulties in the ginning process. A limited number of fiber samples were taken (at the press box) to determine the effect of such humidification, and were tested at the Textile Research Laboratories at Texas Tech. The results are shown in Table I. The average difference in staple length (upper half mean length) due to humidification is almost 1/16-inch. It is reasonable to assume that this difference will be even more pronounced when humidifying seed cottons which are extremely dry.

Several of these moisture control systems will be in operation during the 1959 ginning season in various parts of the Cotton Belt. Extensive tests will be run to determine this system's effects on fiber properties, spinning performance and combing waste. We expect it to improve all three.

This system should find ready acceptance as its use will cause the producer to benefit from the longer staple and slightly increased turnout, the ginner from the elimination of static, and, in all probability, the mills will find the cotton performs better for a given grade and staple. It will find application even where static is not a serious problem. The ability to dry for best grades and rehumidify to protect fiber properties will be adequate reason for its use.

Table I

Table shows correlation of moisture content of the fiber at the feeder apron and the staple length at the press box. Samples were paired from same trailers with only difference being humidification. Staple length is fibrograph upper half mean (average of four determinations per sample).

Humidifier	Moisture Content		Staple Length	
OFF	4.25		.965	
ON		6.00		1.015
OFF	4.50		1.035	
ON		6.75		1.08
OFF	4.25		1.07	
ON		7.50		1.13
OFF	3.00		.97	
ON		5.20		1.02
AVERAGES	4.00	6.35	1.010	1.061
DIFFERENCES	2.36 percent		0.051 inch	

NCPA Rules Amendments Deadline Is April 11

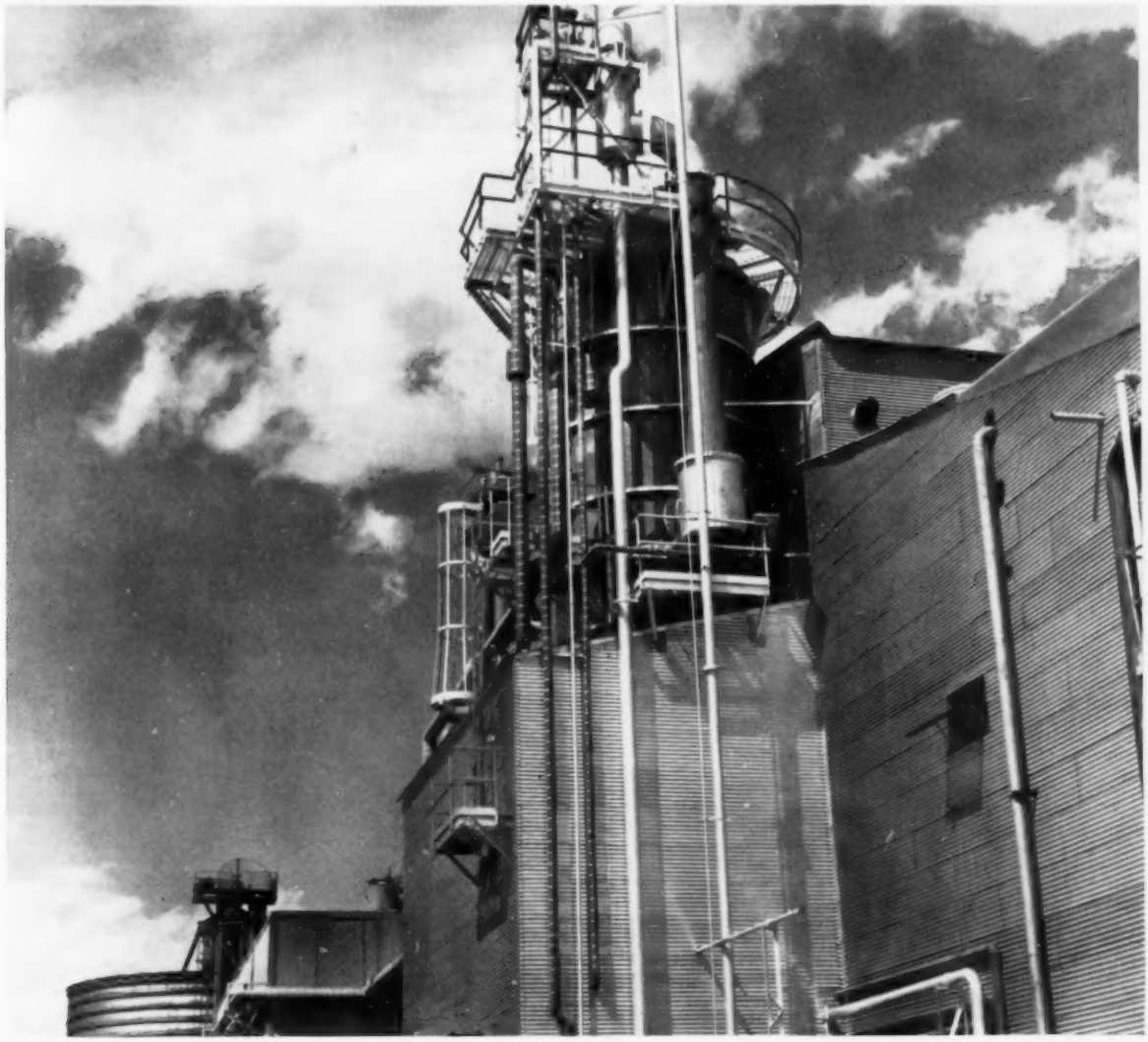
Proposed amendments to trading rules of the National Cottonseed Products Association should be sent to the Executive Offices, P. O. Box 5736, Memphis, before April 11.

John F. Moloney, secretary-treasurer, has sent NCPA members notice that rules suggestions must be submitted at least 30 days before the annual convention. The NCPA rules committee will meet May 9 at the Mark Hopkins Hotel in San Francisco, and the convention will be May 11-12.

TV Program Stresses Quality

A 30-minute television program on cotton production, harvesting and ginning for quality was presented March 7 over WMCT in Memphis. Arkansas-Missouri Ginners' Association arranged the program, which was made possible by Hercules Powder Co.

Blaw-Knox builds for Honeymead . . . a continuous, high vacuum deodorization unit with a daily capacity equivalent to 8% of all the soybean oil processed in the country. This modern unit features a special soaking section that guards against flavor reversion.



World's largest deodorizer upgrades 600,000 pounds of soybean oil a day

With this giant deodorizer Honeymead Products Company completes the third step of an expansion program that started in 1953. At that time Blaw-Knox designed and built a 500-ton-per-day Rotocel solvent extraction plant for this progressive company. By 1956 facilities were expanded and production climbed to a record breaking 1200-tons-per-day. Now this pace setting deodorizer makes Honeymead a leader in large scale continuous refining of soybean oil into edible products.

Such pioneering projects are typical of the over 100 fats and oils plants engineered and built by Blaw-Knox. To see how this experienced technical know-how works for you in your own plans for new processes, plant expansion or modernization, contact our engineers.

For a concise survey of Blaw-Knox's complete engineering and construction services for this booming industry, send for Bulletin 2515. Blaw-Knox Company, Chemical Plants Division with headquarters in Pittsburgh. Branch offices in New York, Chicago, Haddon Heights, New Jersey, Birmingham, Washington, D.C. and San Francisco.

for plants of distinction . . .

BLAW-KNOX

Western Production Conference

(Continued from Page 24)

taken place in the structure of our domestic market. While cotton has taken some very sharp losses in certain industrial uses, these losses have been offset by gains in uses for apparel and household furnishings. These latter uses have been showing a steady, healthy expansion and account for the larger part of our total domestic market. Thus as we face the future it seems evident there can be a steady increase in the amount of cotton consumed in the domestic textile industry.

I am not predicting that there will be any large increase in demand for our cotton, either here or abroad. I am simply saying that there is sound reason for believing there can be. And we can safely predict that somebody will take advantage of these market possibilities.

The evidence is pretty clear that producers of man-made fibers, here and abroad, are definitely interested in larger markets. Every time we have retreated, they have been quite willing to step up production. The same is true of cotton producers in the rest of the world. In fact, I will be surprised if we don't shortly discover that cotton growers in many of our rain-grown areas in the U.S. have decided that they, too, can have a better future by seeking new markets—by looking more to research for becoming competitive in terms of quality, and for reducing costs to a basis that will permit profitable production at more competitive prices.

• **Research Opportunities** — Research possibilities, which are almost unlimited in range and scope, offer great hopes for further major innovations in cost reduction and improvements in cotton culture.

Probably the first means of reducing cost relates to increasing yields per acre. The average yield for the Western area has been close to two bales per acre for the last several years, but yields of three bales are common while four and even five have been reported. To put a maximum on what can be expected in the future would underestimate potentialities of research. Even today, if cotton producers took full advantage of all current knowledge, the result per acre would be still greater.

Research in mechanization that will lower the cost of production is being intensified, and the University of Arizona is tremendously interested in the manifold problems here. Mechanization problems include those relating to cultivation, weed control, chemical application, and harvesting.

Closely related to other research projects already mentioned is to study to develop genetically better strains and varieties. Breeding work for plant size, successful fruiting that avoids excessive shedding, adaptation to climatic conditions, disease resistance, best utilization of water, and prevention of deterioration that sometimes occurs between the boll stage and the mill in harvesting and ginning are just a few of the problems in this general area.

Much is being said today about the possibility of producing hybrid cottonseed which may eventually revolutionize cotton production. Admittedly, the difficulties are great, but that should merely increase the interest in attacking and working out the problems involved.

◆ ◆

Increasing Yields Through Better Planting-Seed Processes

Part I

DR. WARNER D. FISHER, Agronomist, Arizona Experiment Station, Cotton Research Center, Tempe.

Seed quality may be defined in various ways, but in this paper germination is used as the measure of seed quality.

Preharvest Factors

Excessive irrigation, coupled with high nitrogen, often results in rank and lodged plants. Lower bolls are subject to boll rots. Any such bolls which may be picked not only result in poor quality lint but also in poor quality seed. Late season applications of fertilizer and water may also tend to have the same effect. Late fertilization also increases the amount of late cotton which is generally of inferior quality in respect to both lint and seed.

Harvesting Procedures

Optimum procedure for highest quality seed would be to make the first picking when approximately 25 percent of the total crop is open, save seed from the second picking which should get approximately 60 percent of the crop, and save no seed from the remaining 15 percent, which would contain most of the immature seed. In actual practice, two pickings are most common, with the last picking being a scrapping or cleanup operation in many cases. The first picking would include perhaps 80 to 90 percent of the total crop. Seed saved from this crop is usually above minimum germination standards, if the crop is relatively free of rotten or damaged bolls.

• **Machine Versus Handpicking** — Poor quality seed from machine picking may result in two ways: (1) poor quality seed mixed with the good; and (2) the seed may be very dry due to long exposure before picking, and seed cracking, much of which is hidden damage, is often encountered.

These cracked seeds oftentimes are not detected in germination tests on fuzzy seed. However after acid delinting, such seed lots show a reduced germination probably due to the entry of acid into the seed.

Post-Harvest Factors

• **Sterilization for Pink Bollworm** — Steam sterilization at 150-165° F. for 30 seconds does little or no damage to germination under ordinary conditions. The moisture content of the seed at time of sterilization is of importance. Seed with a high moisture content will sustain damage from treatment that has little or no effect on drier seed.

Storage of fuzzy seed after ginning may also influence germination. Storage in bulk piles following steam sterilization is especially hazardous. The residual moisture from the sterilization causes such seed piles to heat with resultant damage to germination.

• **Hot Water Treatment** — Treatment with hot water at 160-170° F. for about 60 seconds immediately following acid delinting is now standard practice on all Pima seed produced in Arizona. This hot water treatment is used to overcome a hard seeded characteristic of the Pima S1 variety and has resulted in great improvement in the uniformity of germination of this variety.

• **Storage** — Planting seed in storage following delinting and processing deteriorates very slowly in this part of the country due to the very dry atmosphere. Seed can be stored for two or three years or perhaps longer with very little loss in germination.

• **Seed Size** — Laboratory germination and field emergence tests on various seed lots failed to show any noticeable differences among these various size classes. It was concluded that grading of seed according to size classes was of no value in this test.

Part II

DR. JOHN T. PRESLEY, Head, Cotton Disease Section, USDA, Beltsville, Md.

We have recently developed a method of measuring changes in seed quality very rapidly and quite accurately. The method is based upon the theory that permeability of the protoplast is affected by injury. Any type of injury apparently affects permeability; therefore, if we consider deterioration a type of injury we should be able to measure the degree of injury by the change in permeability. We assume that the seed have equal amounts of electrolytes, the only difference between good and poor seed is in the speed of leaching.

For our measurements, we carefully weigh out equal amounts of seed and place them in measured volumes of distilled water. Ten grams of seed and 60 c.c. of distilled water was our standard, but any amount of seed that would be considered an adequate sample may be used. When the seed is placed in the water, electrolytes leach from the seed. We then measure the amount of electrolytes leached from the seed during a certain period of time. The measurement is made by a Conductivity Bridge and is measured in ohms resistance. The leaching is more and more rapid as the degree of deterioration increases. A spore germination test may be used to demonstrate differences in the amount of material leaching from seed differing in degree of deterioration.

We have been able to measure the permeability of seed of different qualities and follow the performance of the seed lots in the field to study the relationship between protoplast permeability and field performances. In our studies there was a positive correlation between degree of deterioration and field performances. This difference could be measured in the laboratory in something like 30 minutes.

We have repeatedly checked the

method using a single seed lot with portions deteriorated to different degrees in the laboratory. We checked the germination behavior of the seed at the same time that the permeability was measured. Thus far, our results indicate that changes in seed quality can be measured quite accurately and quite rapidly by this method.

The influence of poor quality planting seed on potential yield in cotton has not received sufficient attention. We made plantings to check this point and have results from the 1958 season which definitely indicate that high quality planting seed will yield appreciably more than low quality seed. A recent report by Toole and Borthwick points out that poorly stored bean seed produced slow growing seedlings which failed to get off to a good start. The weakened plants continued to grow slowly and reached maturity several days late. Total yield was cut 27 to 30 percent in the weakened plants.

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Leaf Crumple—Its Cause, Damage And Control

DR. DONALD C. ERWIN, Assistant Plant Pathologist, California Experiment Station, Riverside.

The first proof that the crumple leaf disease of cotton was caused by a virus which could be carried from plant to plant by the white fly (later identified as the sweet potato white fly, *Bemisia tabaci*) was developed by Dr. R. C. Dickson and his associates, Department of Entomology, University of California, Riverside, in 1945. The disease had been observed several years prior to that time in the field.

On Acala 4-42 cotton (*Gossypium hirsutum*) the disease can be identified by the downward cupping and puckering of leaves, shortening and slight thickening of leaf veins, and crinkling of the flowers. On some plants a mosaic occurs on the leaves. On Egyptian cotton (*Gossypium barbadense*) the symptoms are much milder and usually the leaves curl slightly upward. In greenhouse tests, vein thickening and vein clearing have been more pronounced on this type of cotton than on Acala 4-42.

The virus has been transmitted only by insect or by grafting stem tissue of a diseased plant to a healthy one. The virus was not transmitted through seed in any test conducted.

In California, the disease has been found in the Imperial and Coachella Valleys, and in the Bard area on both first year and second year ratoon (stub) cotton.

In a field test in 1958, conducted in cooperation with Dr. Peter Van Schaik, USDA Field Station at Brawley, Calif., seed cotton yields were not reduced by the virus when the disease occurred late (after Aug. 6). However, the seed cotton yield from plants on which the disease occurred earlier (July 21 to Aug. 6) was reduced 71 percent, and on plants inoculated in April by grafting, was reduced 85 percent (compared to the yield from the non-diseased plants). Although this data is preliminary, it indicated that yield loss was greatest when infection occurred early in the growing season. Studies of the effect of the virus disease on quality of cotton lint are not yet completed.

It does not appear that the virus does as much damage to second year cotton as to first; however, in 1955 Robert Kortsen, farm advisor in Imperial County, showed that the weight of seed cotton from samples totaling 525 bolls was 30 percent less from diseased than from non-diseased second year plants.

Gossypium hirsutum var. Marie Galante as well as certain varieties of *G. arboreum* have shown a high degree of resistance to the disease in greenhouse tests. Since these varieties are agronomically unsuitable for California, the possibility of control by use of resistant varieties does not appear to be promising for the near future. Several varieties of *Gossypium herbaceum* were susceptible to the virus.

To date, no hosts of the virus other than cotton have been found. If other important hosts do not exist, elimination of living cotton plants during the winter might be an efficacious way of reducing the sources of both the virus and the insect vector the following year.

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Producing Hybrids and Controlling Fruiting with Chemicals

DR. H. R. CARNS, Plant Physiologist, USDA, UCLA, Los Angeles, and DR. V. T. WALHOOD, Plant Physiologist, USDA, U.S. Cotton Field Station, Shafter.

The development of numerous experimental cotton hybrids by geneticists and cotton breeders has demonstrated that, if techniques were available for commercial production of hybrid seed, substantial increases in yield, in fiber quality, and in farming efficiency could be expected.

In 1955, it was reported that the chemical sodium alpha, beta-dichloroisobutyrate would induce male sterility when sprayed on cotton plants. Thus, there appeared, for the first time, the possibility of using a chemical to effectively remove the male organs from the flowers of the female parent plant on a large scale.

Investigations were undertaken at various research centers across the Cotton Belt concerned with methods of application, proper qualities to apply, intervals between treatments and its effectiveness as a male gametocide.

Although the experiments varied in methods and timing of applications, rates of the chemical applied, varieties used and methods of measuring results, there was general agreement that female, as well as male, sterility was produced. The relative amount of undesirable female sterility varied rather widely but increased with applied concentration as did the desirable male sterility. Further, as concentration increased lateness of the crop also increased. This appeared to be due to both partial and complete sterility of early bolls. Varieties were found to differ in their response to the chemical, but as yet there is insufficient information to define the differences.

Because of the variability in the observed responses during the two-year test period, a reliable evaluation of the possible usefulnes of this chemical in the production of commercial hybrid cottons is not possible at this time.

In terms of the immediate future, however, it is unlikely that methods for the production of hybrids will be developed. Not only must the details of the use of a chemical sterilant be worked out, but also to be considered are the problems of finding strains which will combine to give the desired characters as well as the development of the techniques required for the large scale production of hybrid cotton planting seed for grower use.

• **Present Trends** — Let us turn now to a consideration of what the present trends are and the extent of our information on the use of chemicals to control fruiting in cotton. The chemicals known to offer such possibilities fall within the group known as the synthetic plant growth regulators. All types of the known growth regulating substances have been tested. In the majority of these tests, where regulators were applied to entire plants, they had little or no effect on the characters measured. In other tests, the effects were actually detrimental. This can be viewed as meaning that, at our present state of knowledge concerning the factors which control fruit-set and fruit development in cotton, growth regulators offer little immediate promise of aiding in the control of fruiting.

Scattered throughout the tests, however, are isolated cases where increased yields or altered flowering and fruiting patterns did occur. Cases in which the desired effects appear to have been achieved are of two general types: First, where entire fields or parts of fields were treated but, for one reason or another, adequate untreated control areas were not included; Second, where carefully designed and controlled tests originally showed stimulation in some but not all repetitions or, where stimulation recurred more or less regularly but only within limited areas. The continued appearance of such data makes it seem likely that synthetic regulators can alter fruit-set and development but only under rather narrow and still undefined limits.

• **Newest Regulators** — The newest regulators of interest as fruit-set chemicals are the gibberellins.

In 1958, at Shafter, Calif., Acala 4-42 grown on two different soil types was compared in the response to gibberellins with untreated plants. Here, gibberellins were not applied as a spray but as a direct application to the terminal growing points of each individual plant.

Cotton on the lighter soil is usually short, from 24 to 30 inches, fruits rapidly with an early cut-out. On the heavier

Cotton Men Admire Cotton Maid at Western Production Conference

MAID OF COTTON MALINDA BERRY has no difficulty in attracting a crowd anywhere, but these cotton growers are even more interested in her than the ordinary male. She is shown with directors in Arizona Cotton Growers' Association at the reception which the Association gave for visitors at the Western Cotton Production Conference in Phoenix. Looking at Malinda are, from the left: Dan W. Clarke, Tucson, president; N. S. Cooper, Casa Grande, vice-president; J. Clyde Wilson, Goodyear, chairman of the board; B. C. Rhodes, Avondale, secretary-treasurer; Al Oshrin, Tucson; R. L. Hale, Marana; Cecil Collerette, Casa Grande; F. C. Layton, Thatcher; and J. S. Francis, Jr., Phoenix, all directors, Arizona Cotton Growers' Association.

soil plant height varies from 36 to 44 inches and plants usually cut-out in the middle of August. In this study final plant heights averaged 28 inches on the lighter soil and 36 inches on the heavier.

Increases in seed cotton were found on plants growing in the lighter soil, and were seven, eight, 10, and 18 percent greater than the untreated controls. The increases were in direct proportion to the number of applications. On the heavier soils yields on all treatments were within two percent of the controls. Increases in height on both soil types were proportionate to the number of applications of gibberellins but this increased growth benefitted only those plants growing on the lighter soil from a yield standpoint. This additional yield resulted from the continued growth of the plants. Bolls were smaller and the crop matured much later in the season.

The work on the Texas High Plains was conducted under the direction of Dr. Harry Lane and involved the varieties Blightmaster and Stormrider grown at two levels of nitrogen (60 pounds of N per acre and no added nitrogen.) Gibberellins were applied as sprays periodically through the season. Plant response to nitrogen fertilization is clearly evident but gibberellins had no marked effect on yields regardless of variety or fertilization. Although treated plants were observed to be larger than the untreated, the increased growth did not affect yields. Present evidence tends to support the view that the increased growth resulting from gibberellins will not increase yields where plants are growing under favorable conditions.

There is no strong evidence at the present time that synthetic regulators will soon be able to serve the cotton grower as they are now serving growers of other crops. Further, it is more and more clearly emphasized that before we can reasonably expect regulators to do this for cotton, considerably more information of a fundamental nature must be available.

In the majority of crop plants, there is an abrupt shift from purely vegetative to reproductive processes. Cotton, on the other hand, is one of the few crops where vegetative growth, flower production, and fruit development occur simultaneously over a relatively long period. Here the shift from vegetative to reproductive growth is gradual but may vary over a rather wide range. Since all of the growth processes are more or less active during flowering and fruiting, attempts to modify one could readily be expected to affect the others. If, for example, we apply regulators to prevent fruit abscission, we may also modify subsequent flowering or change the pattern of plant growth.

• **Research Needs** — What then appears to be the most urgent research needs are an understanding of how the plant controls flowering and fruiting and secondly, the capacity of the cotton plant to set and mature bolls in terms of the available food reserves.

Still remaining unanswered are questions concerning the source within the plant of food materials utilized directly by developing bolls. If such sources were found to be limited, or to be restricted to certain organs or tissues, these relations could still be of considerable importance. These questions must be answered before we can hope to control fruit development and fruit retention in cotton.

Recent development of new methods of extraction, isolation and identification of plant hormones has opened the way to a more critical evaluation of their role and has led to new ideas concerning their relation to fruit development. It is now evident that there are several chemicals present in plants which influence growth and they have either growth promoting and growth retarding or inhibiting properties. These substances have physiological properties which class them as plant hormones and recent developments suggest that more than one may be involved in fruit growth and development.

• **Growth Regulators** — At the UCLA laboratory, investigations are underway on the hormones of young cotton bolls and in their role in boll development. To date, one growth inhibiting and three growth promoting substances have been isolated from extracts of young bolls. The three growth promoting compounds have been tentatively identified.

Of primary interest is the growth inhibiting substance. Work with this material has shown its concentration in the developing boll varies with boll age. Its activity gradually increases from the day of flowering until the time when boll abscission generally occurs, from five to 10 days. In bolls that do not abscise, the activity of this inhibitor then decreases after the maximum is reached until it is often difficult to demonstrate in bolls 14 days of age and older. Comparisons have also been made of the amount of this material that can be extracted from bolls of two Upland cotton varieties which differ widely in flowering and fruiting patterns. The variety producing the larger number of flowers and displaying the greater boll shedding contained four times as much inhibitor as did the variety producing the smaller number of flowers and setting a greater portion as bolls.

The correlations, together with other considerations, led us to suggest that the material might function as a shedding hormone in cotton. Subsequent work with the substance has shown that it acts as an abscission accelerant in both the abscission of leaves and of developing bolls.

Because our present evidence indicates that this growth inhibiting material is a hormone regulating fruiting in cotton, and possibly leaf abscission as well, major emphasis at UCLA is being placed on gaining additional information on its properties and action on the cotton plant. At this time, little is known of is chemical nature and a program is now being organized to develop

methods of obtaining it from the plants in pure form so as to determine its chemical structure and properties.

It is not known at present whether gibberellins are present naturally in cotton. However, their effects when applied to the cotton plant have been so marked that their possible presence and role in fruit development must be considered. Studies at Shafter have shown that applications of these substances to young bolls markedly reduced boll abscission. The maximum retention, on gibberellin treated plants, approached 100 percent during periods when natural retention approximated 30 percent. About 50 percent retention was observed during periods of low boll set, that is, when only 10 percent were being retained on untreated plants.

It has further been shown that an interactive influence exists between the gibberellins and indoleacetic acid, with gibberellins enhancing boll set and indoleacetic acid usually enhancing shedding. Quantitatively, gibberellins have been found to be more effective in decreasing shedding than indoleacetic acid has in increasing it.

Examination of the bolls retained by gibberellins have shown them to be smaller and to contain less seed than bolls from untreated plants. In the light of these data, it would appear that bolls with a low seed complement are normally shed, and, that applied gibberellins act by preventing abscission of such low seed bolls.

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New Irrigation Information

Arizona

LEONARD J. ERIE, Irrigation Engineer, USDA, Cotton Research Center, Tempe.

The ideal answer to coping with the many factors controlled by irrigation and other variables with cotton would be to have some kind of indicator that would tell us when to irrigate.

Research conducted in the past and current studies have contributed much to our knowledge of how to irrigate cotton for maximum production with limited water. Some of these findings, based upon previous research in this area and 1958 studies at the Cotton Research Center, Tempe, in cooperation with the University of Arizona, follow:

The success of the various past years' irrigation schedules was at least partially due to irrigating when about 65 percent of the available water was used from the top three feet or simply from the third foot. In this area the third foot of the soil profile seems to be a good indicator as it designates soil moisture conditions in the critical root zone and thus indicates the time to irrigate. Observing the third foot could be the key to preventing false estimates of the available water for plant use resulting from inadequate applications of irrigation water and rainfall.

The blossoms and boll count studies show that if blossoms are increased, so are bolls, resulting in more cotton. The percentage of bolls from blossoms was essentially the same regardless of irrigation treatments, but wetter irrigation treatments caused increases in total blossoms for the year. Severe soil moisture stresses caused cotton bolls to be smaller. During the fruiting season, the cotton plant will show a predominance of blossoms on top of the dark bluish-green foliage when about 65 percent of the available moisture is used from the top three feet.

If deep irrigations are given in this area, a desirable calendar schedule would be to give the first irrigation about May 25, the second on June 23, the third in two weeks, then irrigate every three weeks until a total of six irrigations have been given.

Several years of study show that any practice that causes early season plant growth up to July 1 is a good practice from the standpoint of maximum production. A logical goal would be to obtain moderate increases in plant height during the fruiting period, preceded by rapid growth as early as possible to provide a plant of sufficient size to carry a good load of bolls. Early vegetative growth usually means high first pickings of cotton.

For maximum production a cotton plant will use at least 40 inches of water. About 70 percent of this water will be used from the upper half of the root zone. Peak use occurs during the last half of July and the first half of August. If about 8 inches of water can be stored during the early September irrigation, it will not be necessary to give additional irrigations.

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California

HIDEMI YAMADA and JOHN R. STOCKTON, Irrigation Specialists, University of California, U.S. Cotton Field Station, Shafter.

In many irrigated areas of California water penetration is a serious problem. Infiltration rates are low and poor lateral movement or subbing into the beds is often encountered. Furrow irrigation involves an initial wetting of the soil surface followed by slow percolation of water into the deeper soil depths. Typically, the rates of water infiltration are high initially then drop to a relatively low constant rate after a short period of time. It is frequently observed that running water in furrows for 10-12 hours with the aid of "tail water systems," in many cases, will only wet a sandy soil to a depth of one foot. Tail water systems are commonly used to enable the irrigator to hold water in furrows for the long periods of time required to obtain a sufficient depth of wetting.

Soil and water conditions usually associated with poor water penetration are as follows:

1. Poor quality water containing a high percentage of sodium in re-

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lation to the other cations and/or a high concentration of bicarbonate ion associated with low levels of calcium and magnesium. Continued use of water of this type will effectively seal the soil surface by dispersing the colloidal particles in the soil.

2. A high sodium percentage on the base exchange or colloidal fraction of the soil, by dispersing the soil particles, also will restrict soil permeability.
3. Physical compaction of surface or subsoil layers due to poor soil management is frequently encountered and found to be associated with low rates of water infiltration. This may even be severe enough to interfere with normal root development of many crops.

• **Water Conditioners** — In recent years a large number of soil and water conditioners and amendments have been marketed for the express purpose of improving water infiltration rates. Many of these materials were tried in field and laboratory tests, to evaluate their effectiveness in overcoming this problem. Some of the materials that were tried were ferric sulfate, ferro-soil-til, aquazyme, petrox, SC-100 and gypsum.

The materials were used with several furrow irrigated crops, applied to the soil surface, mixed in soil and in the water. The rates of infiltration for these soil and water amendments represent averages for several trials at different locations. The ferric sulfate was applied to the bottom of the furrows at "layby." Ferro-soil-til was applied on the soil at rather heavy rates prior to planting. Aquazyme, Petrox and TPS are "soil conditioners" sprayed on the furrows after the last cultivation. SC-100, a wetting agent, and gypsum were applied in the irrigation water. The infiltration rates, where these materials were used, are quite low and none of the materials tried altered these rates.

• **Management Practices** — Several irrigation and soil management practices were also investigated. Three variations of surface irrigation methods were compared on a field prepared for normal furrow irrigation and having a slope of approximately 0.2 percent. Flooding, accomplished by placing borders at frequent intervals across the rows, was compared to a normal furrow system and a "double furrow system." On the double furrow system two small furrows were made between the rows to make two furrow streams where one is normally located. This system results in more wetted surface area than is obtained with the normal furrow stream.

These methods of irrigation were used on cotton, corn and castor beans. The irrigation frequency for the three methods was the same and was determined by the appearance of the crops in flood plots. This irrigation schedule resulted in the appearance of slight moisture stress symptoms in the flood and double furrow plots and a rather severe moisture stress symptoms in the single furrow plots. Soil moisture samples taken a few days after several late summer irrigations showed that the soil profile to a depth of four feet in the flood and double furrow plots contained about twice the amount of available moisture as in the single furrow plots.

The consumptive use of water by these crops during July and early August is about .30 inch per day. When irrigating every 10 to 14 days it was obvious that the single furrow plots did not have sufficient water in the root zone to maintain normal growth whereas in the other two treatments adequate water was available to supply the needs of the plants. Yield decreases obtained with the normal single furrow can be directly attributed to the deficient moisture supply resulting from poor water penetration.

• **Water Penetration** — Since the large-scale development of canal water in the San Joaquin Valley, some farmers have complained of difficulty in getting good water penetration with this water. Recently, through the Shafter-Wasco Irrigation District, this water has become available to farmers in Western Kern County. This past year a study was initiated to compare this water with well water of good quality. These waters differ in their salt content and in nitrate concentration. Both, from a chemical standpoint, are considered to be good irrigation waters. The canal water is extremely low in total solids. The well water, while not considered saline, has approximately 20 times as much salt, and nitrates equivalent to approximately 40 pounds of nitrogen per acre foot of water. These two waters were used to irrigate replicated blocks of cotton, one-half of each block fertilized with 80 pounds of nitrogen per acre and the other half left unfertilized.

The frequency of irrigation for the cotton was based on the observation of moisture stress symptoms mentioned previously. Up until "layby" time the frequency of irrigation was the same, approximately two week intervals for a total of five irrigations. During August, irrigating according to the needs of the crop, it was necessary to irrigate five times where canal water was being used and only twice where well water was being used. The reason for this is apparent when the infiltration rates for these two waters are compared. The rate for the well water, while low, is three times more than that obtained with the canal water.

Soil moisture samples taken a few days after irrigating for 24 hours show that in a depth of four feet there was about three times as much available moisture present where well water had been used. The one inch of available moisture on the soil where canal water was used, even assuming complete extraction by the plants roots to a depth of four feet would only last about four days at this time of the year. Under these conditions, wilting was observed even with water running in the furrows. As a result, plant growth and yield reductions were obtained where canal water was used in spite of the increased frequency of irrigation.

The influence of nitrogen in the well water was also obvious since no response to the added nitrogen was obtained where well water was used. It appears that complaints of poor water penetration by farmers using canal water are well-founded. The problem is apparently connected with the extremely low total salt content of this water and the chemical principles involved are quite analogous to the soil dispersal effect obtained with waters containing relatively high sodium percentages. Initial attempts to improve the situation by adding gypsum to the water to increase the total salts, look promising. However, this approach is seriously limited by the difficulty of getting sufficient gypsum into solution by the present methods of applying gypsum in the water.

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New Plant Foods Information

Arizona

DR. T. C. TUCKER, Department of Agricultural Chemistry and Soils, Arizona Experiment Station, Tucson.

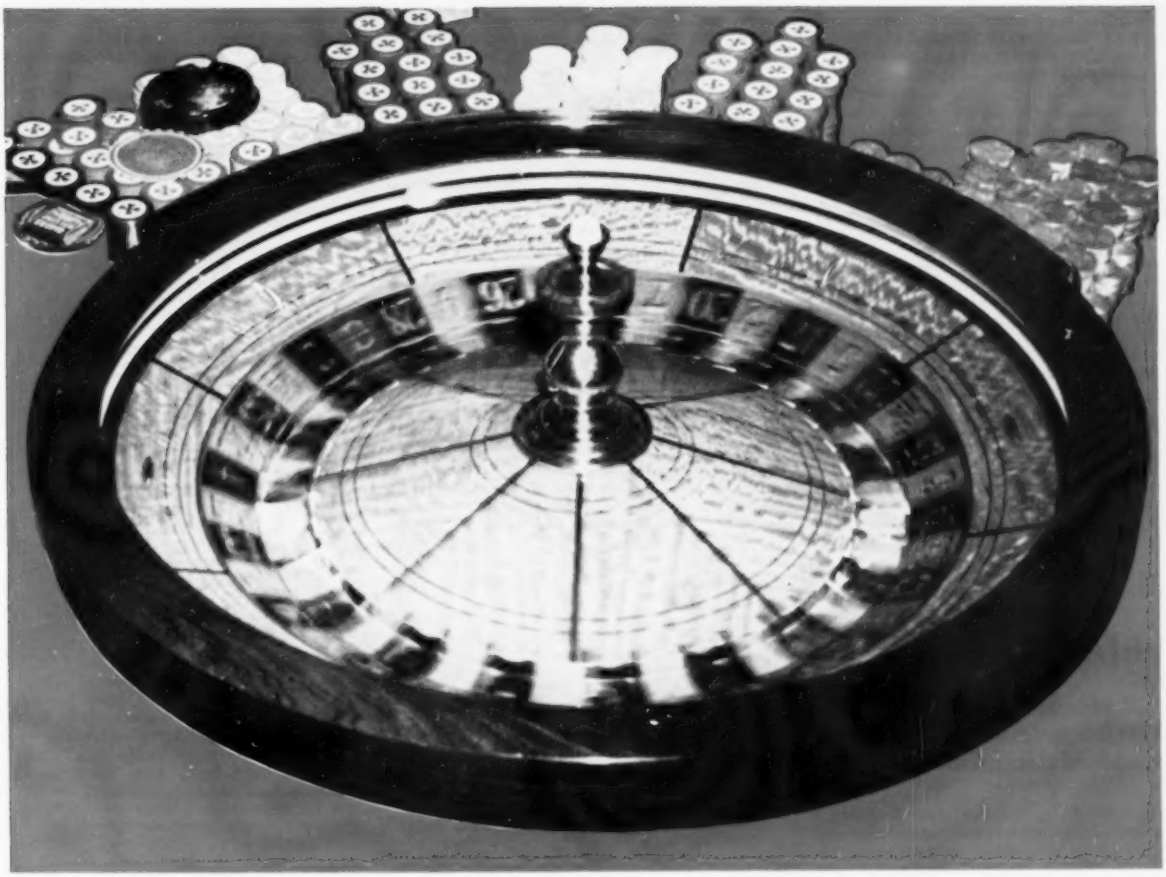
In two cotton experiments conducted in the Chandler area in 1957 on a plant-four, skip-four field, we observed some interesting effects. In general, the outside rows yielded one-fourth to one-third more than the inside rows. On a coarse textured, apparently less productive area, the outside rows yielded proportionately more than on the finer textured soil area where production was about 50 percent higher. In another field the greatest advantage for the outside rows was observed when nitrogen was not applied or applied at a low rate.

This may indicate that less nitrogen need be applied for the outside rows in a skip row planting, or that more total nitrogen is needed in a solid planting. This is to be expected since the outside rows have a large soil area to explore for nitrogen and have less competition from other plants.

More of the cotton was picked in the first picking on the inside rows. Not only was later maturity indicated for the outside rows but also for the more productive finer textured area. It should be emphasized that these results were from only one area.

• **Measuring Maturity** — By using the percent of the total cotton in the first picking as a measure of maturity, we find a generalization cannot be made that will apply to all conditions. In some cases, nitrogen alone has delayed maturity. In other cases low rates of nitrogen have hastened maturity and high rates have resulted in later maturity.

In one case where phosphorus and nitrogen appeared to be deficient, phosphorus alone tended to delay it. This was true in 1957 at a location that did not respond to fertilizer in 1958. In 1958 no appreciable effect of nitrogen or phosphorus was indicated on maturity or yields at this same location. This suggests the climatic factor may be important. At two other locations in 1958 where response to applied nutrients was not obtained, the effect upon maturity of either nitrogen or phosphorus, alone or in combination, was negligible. It appears the effect of nitrogen and/or phosphorus upon maturity depends in part on the relative deficiency of each



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nutrient in the soil and is also conditioned by the climatic factor.

Some of the factors that may determine the effectiveness of nitrogen sources are time of application, soil moisture level and soil texture. A study conducted at the Cotton Research Center in 1958 involved two of these variables. Different sources of nitrogen were applied before pre-irrigation and as a side-dress treatment when the cotton was about 10-12 inches high. These treatments were applied on three irrigation levels. The sources were compared at a nitrogen rate of 50 pounds per acre. The dry irrigation treatment received five irrigations of about 31 inches; the medium, six irrigations of 36 inches; and the wet, twelve irrigations of 66 inches, all including pre-irrigation.

A response to nitrogen was not obtained on either the dry or the medium irrigation treatment. The only significant response from a pre-irrigation application was to ammonium sulfate. Significant responses resulted from the side-dress application of ammonium nitrate, ammonium sulfate, calcium nitrate, and anhydrous ammonia. Urea did not increase yields significantly in either case.

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California

DR. R. H. BASSETT, Fertility Specialist, U.S. Cotton Field Station, Shafter.

Nitrogen is by far the most important fertilizer nutrient overall in cotton production in California and the other Western States. In the San Joaquin Valley of Calif., 50 to 150 pounds an acre of nitrogen have generally produced the most economical returns. In the lower desert valleys, which have a longer growing season, higher rates have sometimes given best returns. On some very deficient soils yields have more than doubled following nitrogen applications and as much as $20 has been returned for each dollar invested in the fertilizer.

Excessive nitrogen fertilization, particularly in combination with excessive irrigation, may detrimentally affect yields through increased susceptibility to Verticillium wilt, delayed maturity, failure to defoliate properly, and lodging, with attendant harvesting difficulties. These effects can likewise adversely affect the inherently high quality in Western cotton.

There is no simple formula for determining the correct amount to apply in order to receive the maximum possible benefit. The surest way is through a field trial comparing different sources and amounts. But these are very costly and even then are of limited application outside the particular field in which the experiment is to be conducted. With the low organic matter content of soils on which most Western cotton is grown, soil tests do not appear very promising. Plant tissue tests are presently being developed in California which may aid in arriving at proper recommendations. At best, these can only supplement other information on soil type, previous crop and fertilizer history, and equally important, the growers' own critical observations and experience.

• **Placement Important** — Proper placement is dependent on the source of fertilizer, the time of application, soil texture, and original level of fertility. Generally a band placement which concentrates the plant food close to the plant making it readily available to the root system has been more effective than broadcasting. With heavy soils or soils with a relatively high level of fertility to begin with, placement has not been so critical.

On some light soils, placing the fertilizer more than about 12 inches from the row has not been as effective as closer placement, probably due in part to increased susceptibility to leaching. At the same time, too close placement of nitrogen, particularly of materials containing free ammonia, should be avoided in order to prevent the possibility of fertilizer injury to the young plants and also to prevent mechanical injury to roots if applied later in the season after the root system is well established.

As a general rule, early applications of fertilizer have been most effective. With phosphorus in particular, an early application would be desirable if this is needed. Unless the soil is very sandy and subject to leaching, one application of nitrogen has proven as effective as more frequent applications, at least in the San Joaquin Valley. On soils of low fertility where leaching is a problem, split applications have a definite advantage.

Unless the native fertility is very low, lack of applied nitrogen has not generally limited early seedling growth so long as the application is made prior to the first irrigation. Recent evidence, however, has indicated that on a light soil which has a fairly high natural fertility, a single application after an early irrigation may delay possible leaching losses and thus result in more effective use of the nitrogen.

The place of phosphorus in the fertilizer program on cotton in California as well as other Western States is not nearly so well established. With nitrogen, the question is how much and in what way to apply; with phosphorus, a more pertinent question might be whether to apply at all.

In California, fields in a few areas have responded well to phosphorus applications and the growers have gone into a phosphorus program. Generally, however, phosphorus is not so limiting and where responses have occurred they have not been nearly so great as from nitrogen applications. In these instances it becomes a question of whether the increased yield will pay for the fertilizer and give a return on the extra fertilizer investment.

Nearly all Western soils are well supplied with potassium. In fact, in the many field trials conducted in California over the past few years, potash applications have tended to depress yields, often to a considerable extent.

• **Zinc Deficiencies** — In California, rather widespread zinc deficiencies are known to occur on citrus and other fruit and horticultural crops. This has been overcome by foliar sprays containing zinc sulfate or some other zinc compound. To date, deficiencies on field crops have not been recognized as being nearly so prevalent. In one area in the San Joaquin Valley, it has been observed for many years that young cotton plants fail to develop normally and growth is almost completely checked until well into the season. It has recently developed that zinc deficiency is a prime factor in this disturbance.

Typically, plants in affected areas germinate normally, but shortly after the appearance of the first true leaves a general bronzing and often a pronounced interveinal chlorosis appears. The leaves become thick and brittle and the margins turn upward. Elongation practically ceases and the shortened internodes tend to give the plant a small bushy appearance. Very little growth occurs until about the middle of July, after which rapid development begins. By the end of the season the plant may be fairly rank. Most of the fruit is set after the first of August resulting in an extremely late crop. With favorable weather conditions much of this can be harvested, but even so, yields may be reduced by more than a bale.

Foliar applications of zinc at frequent intervals on the young cotton plants have been effective in overcoming this condition. This has promoted a more normal growth, flowering, and fruit set with attendant yield increases, particularly in the early pickings. For more permanent measures of correcting this condition soil applications may be desirable.

It might be suspected that other micro-nutrients are also involved, but to date indications are that zinc is the primary factor. This condition is known to occur in the one general area although a deficiency has been suspected in one or two other instances. In limited trials in which micro-nutrients have been applied where there has been no reason to suspect a deficiency, no yield response has been obtained.

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Are Pink Bollworms Being Whipped?

L. F. CURL, Assistant Director, Plant Pest Control Division, USDA, Washington.

The pink bollworm has been eradicated in a number of places under a wide range of ecological conditions, namely: the original southeast Texas infestations of 1917; the southwest Louisiana infestations of 1920; the outbreak at Shreveport in 1921; those near Ennis and Sherman, Texas, in 1921; and the 1932 to 1934 infestations in domestic cotton in northern and western Florida and south-central Georgia which were eradicated by the close of 1936.

The other side of the picture is that infestations became established in border areas of western Texas and New Mexico—which are subject to reinfestation from Mexico—the infestations persisted. However, natural spread of pink bollworm from these border areas remain confined to a few south plains Texas counties—until the insect became established in the Rio Grande Valley of Texas and Mexico—near Brownsville and Matamoros. It is not believed the Brownsville-Matamoros infestation resulted from natural spread from the Torreon area of Mexico. Therefore, if we had eradicated those small incipient infestations which were found on both sides of the border in August, 1936,

most of Texas, all of Oklahoma, Arkansas and Louisiana might still be free of this pest.

Why was the pink bollworm not eradicated in the Brownsville-Matamoras region? The original deadline for stalk destruction was set as of midnight on Oct. 1, 1937. That was a case of "too late with too little."

• **Survival Differences** — The difference in survival of pink bollworms in bolls buried in August as compared with those buried about Oct. 1, clearly indicated the value of an August deadline.

The Aug. 31 deadline was established in 1943 by the Texas Commissioner of Agriculture. Whenever this deadline is met and volunteer cotton or stub cotton not allowed to fruit, there is a heavy suicidal emergence of moths in the late fall following warm rains. In the following crop, the pink bollworm and the boll weevil populations will be extremely low.

However, regardless of how excellent the results of this early stalk destruction have proven to be, the time has passed when such a procedure can accomplish—even in conjunction with other sanitation practices—eradication of the pest in that area. Certainly it is recognized that few areas are able to produce a cotton crop, harvest it, shred the stalks and plow under the crop residue by Aug. 31. In that case you ask—"What is your recommendation?"

The Plant Pest Control Division of the USDA and the Pink Bollworm Research Section of the Entomology Research Division are in agreement that the safest practice for pink bollworm control is to shred the stalks and plow under the debris as early and as deeply as possible. We are also agreed that uniform planting and production of the cotton crop in as short a period as possible plus early, thorough, clean harvest are also essential steps in the reduction of pink bollworm populations. Please note that these practices which are good for control and reduction of populations are, consequently, in an eradication program, of even greater significance. Therefore, we urged a stalk destruction and deep plow-under of crop residues by the close of Dec. 31, in Maricopa and Pinal Counties. After a public hearing where objection to such a date was vigorously expressed by some of those present, the deadline was set for Jan. 20, and our information indicates some did not meet this regulation. Is there a warning to us in this situation which rather closely parallels the early days in the Brownsville-Matamoros region where it took six years to establish an effective program?

• **Current Problems** — Today, we are faced with the problem of making a determination on both the western and eastern periphery of the pink bollworm infestation as to whether we shall eradicate these outer infestations or as to whether we shall give up because of the presence of general infestation which may break out again to reinfest areas only recently eradicated. If the decision is to eradicate in central Arizona, then there is an increasing obligation to such an eradication area that every possible means be taken to suppress pink bollworm populations in the generally infested areas, thereby preventing natural spread and closing every possible loophole in quarantine enforcement.

Suppression of infestations within generally infested areas requires full cooperation of growers, processors, state regulatory agencies, the Extention Service and research workers as well as the USDA. Enforcement of intrastate regulations is the primary responsibility of the state regulatory people and the enforcement of the interstate quarantine is that of the USDA. However, the positive assistance of growers, shippers and others is required if the measures are to be successful.

Recommended Stalk Destruction and Plow Under Deadline

We have emphasized several times in this statement the great importance of stalk destruction and deep plow-under of crop residues. In one or two instances we have commented on appropriate deadline dates for these operations. We want to make a comprehensive recommendation at this point to cover not only the infested areas but what may be done in the non-infested areas as a preventive measure. This latter procedure might well be likened to giving the youth of our country the Salk vaccinations rather than waiting for the crippling polio to strike and then undertake a long, tedious, curative program which so often is not successful.

• **Infested States**—The recommendations are as follows: Arizona: Maricopa and Pinal Counties, and the non-infested counties of Yuma, Mohave, and Yavapai, Dec. 31 each year; Pima, Santa Cruz, Cochise, Graham and Greenlee, Jan. 20 each year. Prohibit stub cotton production throughout state;

New Mexico: Hidalgo, Grant, Luna and Dona Ana Counties, Jan. 20 each year;

Texas. Combine several of the "zones" in southern Texas; add the counties in the northeastern part of the state beginning with Wise, Parker and Montague on the west to the zone just south thereof having a Dec. 15 deadline. Require plow-under of crop residue in each zone concurrent with present stalk destruction deadline;

Oklahoma: Place a three-tier county area in eastern Oklahoma under regulation for the stalk destruction deadline of Dec. 15;

Arkansas: Change present Jan. 31 deadline date to Dec. 15 (this is the old regulated area in western part of state). Establish Dec. 15 deadline date for rest of state west and south of and including counties of Baxter, Searcy, Van Buren, Conway, Perry, Garland, Hot Spring, Grant, Jefferson, Arkansas and Phillips; establish deadline date of Jan. 15 for remainder of state; and

Louisiana: Establish deadline date of Nov. 10 for those parishes south of and including Beauregard, Allen, Evangeline, Landry and those parishes south of the Mississippi-Louisiana land boundary. Establish deadline date of Dec. 15 for remainder of state.

• **Non-Infested States**—Established Dec. 15 as deadline for stalk destruction and plow-under of crop residue in the approximate southern half of Mississippi, Alabama, Georgia and northwest Florida.

Establish Jan. 15 for stalk destruction and plow-under of crop residue for northern half of Mississippi, Alabama and Georgia and for all of Tennessee, South Carolina and North Carolina.

Establish deadline date for stalk destruction and plow-under of crop residue of Dec. 31 in California Counties of Imperial, Riverside, and San Bernardino; establish Jan. 20 for remainder of state and for cotton growing area of Nevada. Prohibit production of stub cotton in California.

Many practical cotton producers will say that these dates cannot be met. We agree that this is true UNLESS everyone is willing to work toward such an objective. It will require a real effort to do the job but it can be done if we are willing to join together in marshalling the full knowledge of our research associates not only in entomology but in agronomy and plant pathology.

Those in the Extension Service should lead in the educational and public relations aspects of the program and those in the control and regulatory agencies may contribute through their wide experience in eradication and control operations. However, even though all these agencies function perfectly, the pink bollworm will not be whipped without the wholehearted support and participation of the cotton growers and the cotton industry.

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What's New in Cotton Insect Control?

DR. GEORGE P. WENE, Entomologist, Arizona Experiment Station, Cotton Research Center, Tempe.

Cotton insect control in the West is different than in the rest of the Cotton Belt area because of the long growing season and also because of the arid conditions prevailing throughout most of the area. As a result of these factors the insect fauna differs and also the degree of crop damage by the pests.

New Insecticides

Sevin, as a 7.5 percent dust, showed promise in controlling lygus bugs, black fleahoppers, salt-marsh catapillars, cotton leaf perforators, cotton thrips, and cotton bollworms. In cage tests, under field conditions, Sevin gave excellent control of beet army worm and stink bugs. The same dust concentration also reduced the cabbage looper population in one field experiment. Sevin, applied as a spray at two pounds per acre, gave excellent salt-marsh caterpillar control, but, considerable difficulty was experienced in mixing the emulsifiable concentrate. The emulsifiable concentrate must be improved before it can be recommended.

Dylox was applied as a spray at the rate of one and one and one-half pounds per acre. Both rates gave excellent control of lygus bugs, cotton leaf perforators, black fleahoppers, cabbage loopers and low populations of stink bugs. Applied as a spray at two pounds per acre excellent control was obtained of salt-marsh caterpillars. The beet army worm has also been controlled with Dylox applied at the rate of one and one-half pounds per acre. Dylox, when used alone at one pound per acre, induced a severe cotton bollworm problem.

Dilan, as a five percent dust, gave excellent control of the cotton leaf perforator and lygus bugs. Dilan, applied as a spray at the rate of 0.6 pound per acre,

gave a long residual control of saltmarsh caterpillars before they were large enough to leave the cluster stage. After the saltmarsh caterpillar had left the cluster stage Dilan gave a mortality of 50 percent; however, the remaining larvae did little or no feeding and further control measures were not required in the two fields observed.

Systemic Insecticides

Thimet, applied at the rate of one pound per acre to cottonseed, when planted during adverse weather conditions, gave a significant reduction in the stand count. This reduction in stand was also reflected in the yields. However, in one experiment, the Thimet treated seed was planted in normal weather and, in the absence of early season insects, neither the stand nor the first picking of cotton was adversely affected.

Thimet, applied as granules at the rate of two pounds per acre in the seed bed, caused a slight reduction in the stand count and in the yield on the first picking, even though the seed was planted during cool, wet weather. However, no injurious insects were present during the first six weeks of plant growth and, therefore, no yield increases could be expected.

Di-Syston, applied at the rate of one pound per acre to cottonseed, gave only a slight reduction in the stand count, or in the yield of seed cotton, when planted during adverse weather conditions. Stand count or the yield of the first picking were not affected when the Di-Syston treated seed was planted during warm weather. However, no injurous insects were present during the first six weeks and, therefore, no yield increases could be expected.

One experiment conducted against the spider mite, *Tetranychus cinnabarinus* (Bois) indicates that Tedion was more effective than any of the organic phosphates. At the end of 16 days it was still controlling the mites.

Resistance to Insecticides and Miticides

There have been numerous grower complaints of insect resistance toward certain insecticides.

In the fall of 1957 the cotton mite, *Tetranychus cinnabarinus* (Bois), was not being controlled by the recommended organic phosphates in the Litchfield Park area. Organic phosphates had been used for every cotton insect, and in addition many farmers had been applying sub-marginal dosages to prevent spider mite population build-up. Research showed this mite had developed a resistance to organic phosphate miticides. Experiments showed aramite, Kethane and Tedion were more effective than increased dosages of the previously effective demeton (Systox).

Until a few years ago the salt-marsh caterpillar was very easily controlled with toxaphene-DDT mixtures applied either as a dust or as a spray. As the result of numberous farmer complaints, this resistance was studied. Results showed that the 15 percent Toxaphene plus five percent DDT plus 40 percent sulphur dust mixture failed to control salt-marsh caterpillars. A spray mixture of four pounds toxaphene plus two pounds of DDT failed to control even one day old salt-marsh caterpillars.

The beet army werm has developed a resistance to DDT.

There have also been numerous complaints about the failure of 15 percent toxaphene plus five percent DDT plus 40 percent sulphur mixture to control lygus bugs. Three large scale experiments showed that this mixture will still give effective lygus bug control. Timing and the number of applications are very important factors in lygus bug control. Lack of understanding of these two factors is apparently the cause of recent failures to control lygus bugs.

For the past four or five years, the cabbage looper has developed a resistance to such insecticides as DDT, toxaphene and endrin. Experiments have shown that a dust mixture of 1.5 percent endrin with 1.5 percent methyl parathion will give commercial control of this pest. Dylox, applied at the rate of 1.5 pounds per acre, also looks promising.

Problems Requiring More Research Work

Timeliness of insecticidal applications is still the number one problem in the control of lygus bugs. Research work conducted during the past year shows that scheduled applications of insecticides, started early for lygus bugs, increased yields of the first cotton picking by one half bale or more per acre. Of greater significance is the fact that at no time was the lygus bug infestation great enough to justify control by our present standard. These results indicate the need for more research in order to determine at what level control measures should be started.

The omnivorous leaf roller is becoming a greater problem. At present, effective control can only be obtained by applying repeated applications of the recommended insecticides.

Control of various species of cotton mites is complicated by the mites' ability to rapidly develop resistance to the newly recommended miticides (especially the organic phosphates). More research work needs to be done on the factors which increase mite populations. In Arizona, natural control handles mite infestations during the early part of the cotton growing season. More research is needed in order to see if the effectiveness of natural control can be carried over to the latter part of the season. Obviously new miticides should be studied, along with the factors which influence the effectiveness of miticides, such as rate, timeliness and method of application.

Natural, or biological, control has worked effectively for the control of certain cotton insects. Preliminary research work conducted in Arizona shows that predators are greatly overrated as a control for lygus bugs, which is contrary to the opinions scattered throughout the literature. Research work should be conducted in order to find some definite "yardsticks" for measuring the effectiveness of natural control.

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Insect Control Program, Pay-Off

Extension Service Entomologist

DR. J. N. RONEY, Arizona Extension Service, Phoenix.

There are certain things a farmer must do if he wishes to secure maximum insect pay-off. He should learn about the insects in his cotton field, from seedling stage to harvest, and the type of injury each causes. If the farmer is not willing to learn about these insects, he should select a fieldman in whom he has faith. He should then let the fieldman check his field periodically and start controls when suggested.

• **Case I** — A good example of a poor pay-off is this hypothetical case. John Johnson plants his cotton and secures a good stand in spite of a poor seedbed and only mediocre moisture. Just as the plants reach the four-leaf stage, thrips appear in great number and the very small squares start to shed. Neighbors and insecticide fieldmen suggest to John that he should control the thrips. John says, "Nothing doing, that is a normal shed. I will save my money for insecticides to control bollworms." The plant becomes vegetative and it is difficult to get the plant to fruit. At the same time the plant grows very tall and weak. When the cotton plants get about three feet tall and squaring again, lygus bugs show up in injurious numbers and many of the squares flare and fall off. John again waits for the bollworms. About the middle of August a few bollworms do show up. John calls his fieldman and asks that a dust for control of the bollworm be started at once. Two applications of a good recommended insecticide are applied at weekly intervals. At the end of the season John receives only a little over a bale of poor quality cotton.

• **Case II** — Another case of no pay-off is Jerry Plant, who is always applying an insecticide. He uses some dust or spray. Two days later he changes insecticide. Four days later he feels he didn't get the desired control, and again changes material. During the season Jerry uses 15 applications of about eight different insecticides. At the end of the season he harvests about 700 pounds of lint per acre.

• **Case III** — A good example of a top pay-off with good insect control is another hypothetical case. Jack Poole had learned something about some of the insects but he decided to let a good fieldman check his fields. He met with the fieldman and arranged for him to start checking as soon as the plants got past the two-leaf stage. Fortunately, no early season control was needed. Blooms started to appear and also lygus bugs, cotton fleahoppers, and black fleahoppers. The fieldman suggested controls. Both men consulted the Extension Service recommendations, and a recommended dust was applied. Jack decided to make two applications at seven-day intervals. After the second application he could still find a few lygus bugs and black fleahoppers. He then applied the third application. The crop was then free until August when a few bollworms, stink bugs, and leaf perforators showed up. The fieldman suggested ano-

ther recommended insecticide. After the second application a few flags of salt-marsh caterpillars showed up. The fieldman suggested that Jack spray with a recommended mixture. Jack applied two applications with good results. At the end of the season he picked about 1,050 pounds of high quality lint cotton.

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Insecticide Industry Representative

F. MIKE SVOBODA, Entomologist, White Chemical Company, Phoenix.

Most insecticides in their pure form would be absolutely useless to a grower. Some pure technical insecticides are solids and hard as a rock, some are semi-solids and others are heavy liquids. With few exceptions all have one peculiarity, they won't mix with water.

The first requirement when manufacturing spray materials is a chemical to dissolve or cut the insecticide. This can usually be one of several materials. It can be xylene, an expensive chemical which helps make a good finished product or it can be kerosene which makes a cheaper spray material and exhibits some phytotoxic qualities.

The next requirement is the addition of an emulsifier. Some emulsifiers cost a few cents a pound, others a few dollars a pound. The difference in the formulated product is very outstanding. A poor emulsifier will cause separation and improper mixing in the spray tank. After such a mixture is applied to a crop the emulsifier will go one way, the water will go another way and cause the toxicant particles to be separated. This can and does cause poor insect control.

When manufacturing dusts, it is necessary to get the active ingredient properly mixed, blended or impregnated with the right carriers, the so-called inert ingredients. Almost every insecticide requires a different set of manufacturing specifications.

The insecticides that are dry in technical form, such as DDT, are ground and mixed with high grade carriers to make a dust base. Grinding is both a difficult and expensive operation. Particle size is extremely important.

• **Carriers Vary** — Insecticides vary as to which kind of carrier is required to make a good dust base. Some require an acid carrier, some a basic carrier, while others require a neutral carrier. The dust base is mixed with still other carriers to make a formulated dust in the form that will be used in your fields. The carriers which should be used to make a good finished product also have specific requirements.

All good carriers are expensive, some cost as much as $100 a ton. Low grade carriers that should not be used, such as tailings from the mines which can be purchased for as low as $10 a ton. These low grade carriers make poor dusts, the active ingredient is there but that is about all. Bioassay work has shown that improper carriers can tie up the active ingredients and cause poor control results.

The best dusts that you can buy will, in the long run, be your most economical material. Original cost of an insecticide means very little. What a material actually costs you can be determined only from knowing the value and benefit received from the degree of insect control in your fields.

• **Industry Helps** — The industry, I am sure, will continue to help the grower by maintaining the responsibility of continuing to manufacture high quality dusts and sprays. However, as a grower, it is important for you to remember no one can hang a low price tag on a high quality material, you get only what you pay for.

The next responsibility I would like to mention briefly is that of the qualified fieldmen. Some qualities to look for in a fieldman are honesty, faithfulness, technical knowledge and diligence. The grower also has a responsibility to the fieldman to give him a chance to do a good job.

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Cotton Grower

T. H. SIEK, Ranch Manager, J. G. Boswell Company, Litchfield Park, Ariz.

By far, the major emphasis in cotton insect control has been in four phases: (1) economic levels of infestation; (2) materials; (3) rates; and (4) application. While these four factors are vital in an economic insect control program there is a fifth factor—timing of control measures. There have been countless dust or spray jobs that failed, not because of improper rates or the wrong material or a poor application job, but due to poor timing.

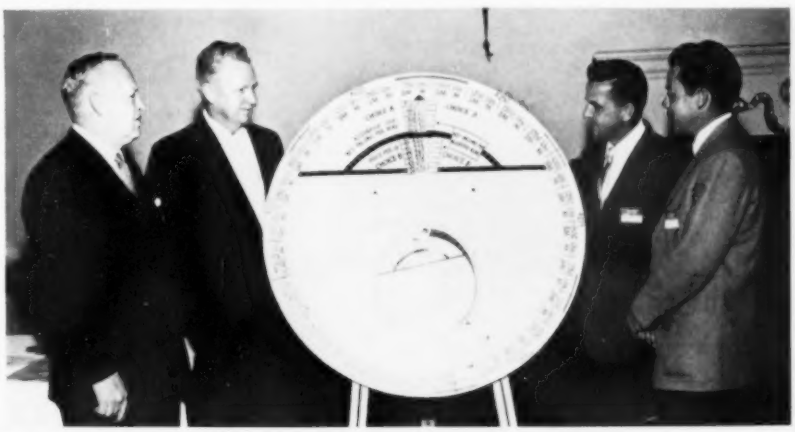
In the majority of poor timing cases, the cause has been either a too hurried field check or too long a time interval between field checks.

With the rapid development of new materials, it is practically impossible for the average farmer to even learn the names of the materials, much less the detailed information on rates, characteristics, tolerances, etc. Much of the information on these new materials is not available to the farmer in plain language and, even if it were, the farmer would have little time left for farming if he attempted to become an expert on insecticides—and if you throw in fungicides, herbicides, hormones, defoliants, and others, he would have no time left for farming.

In our operation these problems have been overcome by the use of our own entomologist, who is responsible for the entire insect control program. This man is responsible to our company; but he also makes good use of the commercial men servicing our account. It is from the commercial salesman that our entomologist receives a lot of the newest information on new materials, what's killing certain bugs in other fields in the area, and other very vital information. In case of problems the salesman checks a field with the entomologist and a program for control is formulated with good results. With our own man in the fields we overcame a major problem in the economical control of harmful cotton insects—that problem being the timing of control for optimum kill at lowest costs.

The costs of an entomologist can be afforded by several farmers going together and hiring a good man to check their fields and take care of the insect program. I know of some cases where this program did not work for two reasons: (1) Lack of confidence by the farmers in their entomologist; and (2) a wrong attitude of the entomologist as to his realm of authority and his lack of confidence in the commercial man.

To obtain the most economical insect control, the trained entomologist should be working for and responsible to the growers. For the most effective and satisfactory control of the insects, the entomologist should work in close cooperation with the commercial companies and the research and Extension people. I know this program is a paying proposition. Our insect control program this



To "B" or Not To "B", That Is the Question

PLAN A or PLAN B? That has been the question wherever cotton folks were this spring, and these cotton leaders were trying to find the answer from a Cotton Wheel prepared by University of Arizona agricultural economists. Taken during the Western Cotton Production Conference at Phoenix, the picture shows, left to right: O. Rawson, Safford Valley Cotton Growers' Co-op, Safford, Ariz.; E. J. Neufeld, Calcot, Ltd., Bakersfield, Calif.; Ed Fischer, Producers Cotton Oil Co., Fresno, Calif.; and J. S. Francis, Jr., Valley Gin Co., Peoria, Ariz.

past year amounted to $21 per acre for materials and application—compare that to your own costs.

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Better Weed Control In Seedling Cotton

JIM HUGHES, Sunland Industries, Fresno, Calif.

The State Wide Weed Control Committee of the California State Chamber of Commerce conservatively estimates weeds are costing the California farmer at least $300 million annually. This amounts to more than the total yearly income from cotton, our leading cash crop. Weeds in cotton are costing an average of $20 to $40 an acre. With few exceptions we have been using the horse and buggy approach to solve our problem!

• **Annual Weeds** — Of major concern are annual weeds, principally water grass which sometimes completely takes over after the last cultivation. Annual morning glory in a few scattered areas is becoming a threat. Pigweed, purslane, witch grass and tickle grass are all problems. The perennial weeds such as Johnsongrass, Bermuda grass, morning glory, Russian knapweed and white horse nettle are with us the entire season.

Numerous field trials the last two years have shown annual weeds can be controlled after the last cultivation with diuron, a substituted urea. Applied at rates of 1.2 to 1.6 pounds in 25 to 40 gallons of water per acre at "layby" time, diuron has given control for the remainder of the season. Diuron has been registered for use in irrigated cotton in California to be applied immediately after the last cultivation. Last year approximately 1,500 acres of cotton were treated with diuron mostly as 5 to 10 acre demonstration plots. This season an estimated 5 to 10 thousand acres of cotton will be treated with diuron in the San Joaquin Valley.

"Layby" time usually occurs when cotton is one to one and one-half feet high. Except to aid in water penetration during irrigation in some areas, the last two cultivations are carried out to control weeds. An irrigation usually follows "layby" in three to four days which affords annual weeds a very suitable environment for rapid growth.

If application of a selective weed killer such as diuron could be made when cotton was six to 10 inches high, several advantages would be noted: (1) two to three cultivations could be discontinued; (2) there would be less compaction to the soil especially where heavy equipment is used; and (3) the problem of residue in the soil would be of less concern in subsequent crops.

Last season, applications of diuron at 1.6 pounds per acre applied in 50 gallons of water were made in five different locations. In all locations cotton seedlings were six to eight inches high.

We found diuron to be quite selective at this early stage of growth. We were hard pressed to find any bottom leaves showing the characteristic chlorotic symptoms of a substituted urea. Weed control in most cases averaged 95 percent or better, and we did not note any decrease in yield or other detrimental effects from any of our treatments.

These trials have indicated weed control would appear to be very feasible at this early stage of growth. More field testing is contemplated this season on many more soil types under more local conditions.

• **Perennial Weeds** — Perennial weeds, especially perennial morning glory and Johnsongrass cause considerable problems each year. Prior to last season, the only method of control was by cultivation or soil sterilization.

During the summer of 1956, two benzoic acids, 2,3,6-Trichlorobenzoic acid and Polychlorobenzoic acid were field tested for control of established perennial morning glory. Results have indicated the 2,3,6-Trichlorobenzoic (2,3,6-TBA) acid isomer to give better control. Rates of 10 to 20 pounds per acre basis were applied in 100 to 300 gallons of water both as a soil and foliage treatment. Soil treatments at the rate of 20 pounds per acre of the 2,3,6-TBA acid to date have given excellent control. Temporary soil sterilization of at least a year has been observed in most cases for the higher rate of application.

Last season 2,3,6-TBA was used in seedling cotton to control perennial morning glory. Areas of morning glory were spot-treated using two pounds of 2,3,6-TBA mixed in 50 gallons of water and this mixture applied to an area of approximately one square rod. Spot-treatments were made when cotton seedlings were four to eight inches high. Where 2,3,6-TBA was sprayed on young cotton these plants were soon killed. Furrow irrigation with complete subbing to the tops of the beds carried the weed killer into the soil. We were careful to watch for any signs of drift or volatilization. Characteristic symptoms on cotton could not be observed further than eight to 10 feet from the spot-treatment.

The benzoic acids have distinct advantages for perennial weed control in cotton:

1. They have given over-all better control of perennial weeds than any weed killer we have tried.
2. Although care must be taken during application to keep drift at a minimum, no permit is required for use during the growing season.
3. Benzoic acids are readily soluble in water and are easy to apply.
4. Other agronomic crops can be grown approximately one year after treatment of the soil. Highly productive land can be put back into production much sooner than lands sterilized with a complete sterilant.

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Field Scale Comparison of Various Methods Used in Weed Control

DR. K. C. HAMILTON, Associate Agronomist, and M. D. CANNON, Agricultural Engineer, Arizona Experiment Station, Tucson.

To determine the relative merits of flaming and monuron in combination with mechanical cultivation, a test was started in 1957 at Marana to obtain a field-scale comparison of these methods.

The first method was mechanical cultivation with a four-row cultivator with sweeps, disks, and furrow openers five or six times during May, June and July. The second method of weed control was mechanical cultivation as in the first method, supplemented with three or four flame cultivations in June and July. The flame and mechanical cultivations were done in single operation. The third method was mechanical cultivation with one or one and one-eighth pounds of monuron per acre applied to the soil at layby. A relatively high clearance sprayer of this type is needed for the layby application. The fourth method was mechanical cultivation supplemented with both flame cultivation and layby application of monuron.

The plots in the tests were one-fourth-mile long and four rows wide in 1957, and one-fourth-mile long and eight rows wide in 1958. Each control method was repeated six times at different parts of the field. Johnsongrass present was controlled by chopping and will not be considered in this discussion. Normal grower practices were followed for the most part although for harvest reasons the test area was defoliated somewhat earlier than normal. All plots were harvested by machine. Bale weight and grade were obtained from each plot.

The test was located in a severe Verticillium wilt area so Acala-44-WR was the variety used.

• **Cotton Yields** — There was no difference in seed cotton yield; all treatments yielded about 2,100 pounds per acre. There was also no significant difference in the yield of lint. When you examine the lint percent there was a difference between treatments. Where monuron was included, the lint percent was higher (an average of 1.2 percent) than where flame cultivation and/or mechanical cultivation alone were used. There was considerable weed trash in the seed cotton harvested from the latter plots so the gin turnout was lower.

The yield of lint cotton from the different methods of weed control for the past two years was similar. For either year, the small yield variations are not significantly different. But when the data for two years is combined, with the low treatment each year the same (mechanical plus flame) and the high treatment each year (mechanical plus monuron), some of the differences become significant. Where monuron supplemented mechanical cultivation the yield of lint cotton was 23 pounds per acre higher than where flaming supplemented mechanical cultivation. Flame cultivation consistently reduced the yield of lint cotton two percent from comparable cultivated and monuron treated plots. This two percent reduction where flame cultivation was used was significant and represented roughly a $4.50 loss per acre each year.

There has been a trend—not significant because of considerable variation between the bales from a given treatment in different parts of the field, but a trend never-the-less—for bales from plots where monuron was applied to receive a higher grade than bales from plots not treated with monuron. This trend has averaged one-third of the

grade from SLM toward M during the past two years.

• **Weed Populations** — Let's consider weed populations at harvest under the different control methods. If weed populations had been rated at layby there would have been little difference, if any. Under our rating system 0 would be weed-free and 100 would be no weed control. The trends each year were similar. A severe annual weed infestation occurred where only mechanical cultivation was used. The average rating was 68 for mechanical cultivation. Somewhat fewer weeds occurred where mechanical cultivation was supplemented with flame cultivation; the average rating was 35. Very few annual weeds were present at harvest on any of the plots where monuron was applied at layby; the average ratings were 10 and 5 for these treatments.

• **Cost Figures** — Here are the cost figures for the four methods of controlling annual weeds for the past two years. If your per acre costs of operation differ frome our $1 for mechanical cultivation; $ .90 for flame cultivation, and $4.25 for an application of monuron; do some quick arithmetic. Mechanical cultivation was the cheapest control method; $6 per acre per year. Where flame cultivation or monuron were used to supplement mechanical cultivation the average costs were $9.15 and $9.75 per acre Where both flame cultivation and monuron were used to supplement mechanical cultivation the annual cost was $12.45.

These cost figures must be adjusted by considering the extra lint production on the monuron treated plots and the lower lint production on the flamed plots. Also the possibility of improved grades on the monuron treated plots should be considered.

An important cost adjustment, however, may not be in this year's costs, but might be rated in the cost of producing future crops. At Marana the past two years have not been good years for weeds. Despite this, where mechanical and flame cultivation were used, the annual weeds have matured and shattered seed. Each year the weed seed population in the soil has increased under these treatments and future costs of annual weed control might increase. Where monuron was used, few weeds matured seed. The costs for weed control should decrease as the weed seed in the soil is depleted under these treatments.

• **Summary** — The accumulative effects of weed control methods are a problem for future investigation. In an attempt to find whether weed problems increase under normal cultivation and decrease with other control methods, we will try to repeat last year's treatments on exactly the same plots for the next two years.

Two years of this large-scale test has confirmed what many growers have found. Mechanical and flame cultivation controlled most of the annual weeds while tractors could get through the field. Layby applications of monuron extended the period of weed control until harvest.

Layby applications of monuron to supplement mechanical cultivation also: (1) resulted in a higher lint percent on machine-picked cotton; and (2) may have resulted in better grades on machine-picked cotton. ◆ ◆

■ Textile Advertisers Promoting Cotton

■ TEXTILE ADVERTISERS have promoted cotton more in recent years. National Cotton Council reports $23,806,104 spent last year to advertise cotton products in national magazines. While slightly less than in 1957, this was substantially more than in previous years.

Textile advertisers are putting increased emphasis on cotton as a selling point for fabrics and apparel, the survey has showed. In 1945 only 17 percent of magazine advertisements for cotton products mentioned the cotton content; this ratio increased to 48 percent in 1952, 63 percent in 1956, 66 percent in 1957, and 62 percent in 1958.

These figures were compiled by the Council as part of an identification survey of cotton product advertising. They cover space cost only in 58 national consumer magazines. To some extent, the increases reflect higher space costs as well as greater volume.

Ernest Stewart, Council sales promotion manager, predicted that cotton product magazine advertising would reach a seasonal high of some $4 million during May, when the nation observes Cotton Week, May 18-23.

Accurate Moisture Content Instantly
With This New Super-Sensitive
COTTON MOISTURE METER
Small and Handy to Carry
Quick and Easy to Use
With this pocket size, precision, German-made instrument you just insert a cotton sample firmly in the cup, press the button and read the moisture content. Accurately operates on the principle of electric conductivity. The easily replaced battery makes the instrument completely portable. Specially designed cup electrode into which the cotton is placed is included with this reasonably priced meter.
Direct Reading . . . No Charts or Tables Necessary.
Complete with handsome carrying case and guaranteed a full year.
SAMUEL JACKSON MFG. CO.
P. O. BOX 5007 LUBBOCK, TEXAS POrter 2-2894

KEEP YOUR GIN YARD FULL!
Use BELTON SUPERIOR BAGGING and they'll KEEP COMING BACK!
2 lb. weight — 21 lbs. TARE
Open weave Jute Bagging
Pretested for uniform strength
Makes cleaner, stronger bales
"Built to Stand the Pressure"
BELTON BAGGING CO.
Belton, South Carolina

Weed Control in Irrigation Systems

H. FRED ARLE, Agronomist, USDA, Phoenix.

In Arizona, weed control along irrigation systems usually implies Johnsongrass control. This pest not only siphons off valuable irrigation water and complicates water delivery routine and canal maintenance, but also is a source of infestation to agricultural land. Johnsongrass stubble also provides an overwintering habitat for some destructive cotton insects.

Very frequently, the extent of these hidden costs are not fully realized, and weed control is therefore delayed or neglected. There has, however, been notable imporvement in the effort to control weeds along irrigation systems during the past 10 years. At present there are several methods available, each of which is effective when proper procedures are observed.

• **Aromatic Oils** — The use of aromatic weed oils has given excellent control of Johnsongrass in one or two seasons. Tests have shown best results are obtained from the use of undiluted aromatic oils with repeated applications made at intervals not exceeding four weeks. Grass should never be allowed to grow more than 12-15 inches tall before re-treating. If grass is permitted to grow beyond this stage, more oil is required for complete coverage. Delays also afford perennial grasses sufficient time to replenish root reserves which are reduced in re-establishing top growth. The first application in an oil spray program should be made during early spring, after growth has started but preferably before grass surpasses a height of 12-15 inches. At this season the root reserves are at their lowest point, the plant being at the weakest stage in its life cycle. Failure to get the program under way at this time adds to the total cost of control.

Adequate coverage can be obtained with 160 gallons of oil per acre when treatment is made at the proper time. This is equal to a ditch bank area one mile long and eight and one-third feet wide. The volume suggested would be necessary for a continuous and unbroken stand of Johnsongrass. Where grass occurs in scattered patches, oil use would be decreased proportionately. After the third oil treatment, a definite reduction in the vigor of regrowth is usually noted. The number of treatments or the volume of oil required to kill a stand of grass is dependent upon such factors as soil moisture, soil fertility and soil type. Satisfactory control has been obtained with as few as four applications, while in other instances nine treatments were required. The amount of oil has ranged from 500 to 725 gallons per acre.

• **Systemic Herbicide** — In more recent years dalapon (2.2-dichloropropionic), a systemic herbicide, has proven effective for control of weedy grasses. When applied to leaves, some is absorbed, enters the conductive system, and is translocated to the roots and rhizomes.

Best results are obtained when dalapon is applied to foliage of vigorously growing grass. Initial effectiveness is influenced by temperature. When applied early in the spring, symptoms usually do not become evident for two to three weeks. However, when applications are made during hot summer weather, symptoms usually become noticeable within a few days.

Grass foliage should be thoroughly wet with a solution containing one pound of dalapon per five gallons of water. Best results are obtained if dalapon is applied when grass is 12-15 inches high and growing vigorously.

A single application of dalapon under Arizona conditions will not suppress Johnsongrass throughout the entire season. Generally a treatment stops growth for about six weeks. Re-treatment should be made when Johnsongrass has again reached a height of 12-15 inches. When the first application is made during early April, two or possibly three re-treatments, are needed later in the growing season. When such a schedule is followed, almost complete control will be obtained. During the following year, the weed control program can switch to prevention of re-infestation by Johnsongrass seedlings or encroachment by annual broad-leaved weeds.

• **Liquid Petroleum** — During the past several years, many farmers have purchased liquefied petroleum burners adapted for controlling weeds along irrigation ditches. Frequently, improper use of these burners has resulted in costly, temporary control of established Johnsongrass. However, if burning is done at the proper interval, control is possible during a single growing season. The high flame temperature, approximately 3,000 degrees F., causes plant cells to rupture and results in the destruction of stems and foliage.

Extreme burning is not necessary and actually is undesirable. Flame should be applied only until top growth wilts. This top growth will dry within a few days. The dry residue is readily destroyed by the next burning and provides fuel which aids in the destruction of Johnsongrass regrowth. Over-burning is very expensive, while a well managed operation can be equally effective at nominal cost. Proper degree of burning can best be determined by experience and close observation of the results.

To obtain maximum weed control by flaming, repeated burning must be conducted on a definite schedule. On experimental plots best control was obtained when grass was burned every two weeks. Twelve to 14 burnings during a single season at two-week intervals have eliminated established Johnsongrass. When burned at two-week intervals, regrowth continued to be vigorous until mid-summer, then an abrupt loss of plant vigor and rate of growth became evident. Reduced plant vigor was the result of repeated destruction of top growth, which probably caused a continued decline of carbohydrate reserves in the Johnsongrass rhizomes as the plant used these reserves to establish new top growth. Failure to burn at the proper interval allows Johnsongrass to recover and benefits of previous treatments are lost.

• **Soil Sterilants**—A group of chemicals commonly referred to as soil sterilants can be used advantageously along the banks of cement-lined canals. At the present time a number of sterilant chemicals are commercially available. They include various combinations of sodium chlorate, borates, monuron, diuron and fenuron. When applied in sufficient quantity, these chemicals prevent the growth of all vegetation and this control may persist for several years. Toxicity occurs after the chemicals are absorbed by plant roots. After application, they must be leached through the soil into the zone of absorbing roots.

It is essential that the application be followed by sufficient precipitation to cause downward movement of the chemical. The light rainfall pattern in Arizona frequently limits immediate effectiveness, however; under dry conditions decomposition is very slow. The chemicals will persist for lengthy periods and become activated when precipitation occurs. November is a favorable month to make applications to take advantage of winter rains.

The cost of a single treatment is rather high. However, under ideal conditions one application results in a long period of control and therefore eliminates the labor costs incurred by more frequent treatments required by the previously mentioned methods.

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Dollars and Sense Of Lint Quality

OMER W. HERRMANN, Deputy Administrator, Agricultural Marketing Service, USDA, Washington.

The more elusive factors in cotton quality are hard to measure, and some of the present methods of making these measurements are too expensive or too time-consuming. These difficulties prevent us from eliminating the complaints of our mill customers in this segment of quality and even prevent sound evaluation of complaints in many cases.

However, we do know that quality is of basic importance to the textile industry, in terms of cost and operational efficiency as well as consumer satisfaction—and that it means just about everything to the cotton grower, in terms of prices for his crop.

We know that the measurements we can presently make in the "character" area have proved their practical importance—such as measures of fiber fineness, maturity, strength, and length uniformity. We are impressed by the fact that many parts of the cotton trade are already using, on their own initiative, various supplemental instruments and techniques for helping them determine quality or "character" factors that they find are important in their operations.

• **Interest of Manufacturers** — With the increasing variety of manmade fibers and other products which have been chemically "tailored" for particular uses, the pressure for selectivity in use of fibers is mounting. Cotton spinners are finding it more and more essential to obtain cotton with a combination of characteristics suited to low cost production of yarns, fabrics, and other end products.

This need, together with the merging

of many independent mills into chains, has contributed to the increase in direct mill purchasing of cotton in recent years. At the same same time, cotton spinners have found it increasingly easy, with help from manufacturers of synthetics, to switch away from cotton to production of blends.

• **Concern of Producers** — Because quality is a key to producers' prices and to continuing market demand, it means much to cotton growers. And, in fact, producers have done a great deal to improve quality in recent years.

In general, much better cotton is being marketed today than a decade ago—cotton of longer staple and greater fiber strength that makes for greater yarn strength, fewer neps, and less waste in processing.

• **Concern of Ginners** — The ginning industry, too, is aware of our quality problems. Certainly the rapid spread of lint cleaners and in use of dryers and overhead cleaners, are results of this concern. Also, ginning capacity has been expanded in some areas largely to help farmers get their cotton harvested and ginned early, in order to prevent adverse effects of weather on cotton quality.

• **Research Reflects Interests**—Research is developing new knowledge of how to create and protect the quality of our crop. And, we need to know much more. Indeed, we must know more. There is need, to be sure, for wider application of existing knowledge—but we face pressing needs for additional precise and practical information, tools, and techniques to safeguard quality.

• **Mill Performance Data** — Due to technological advances in textile processing, cotton is today being called on for more difficult kinds of performance. Quality measurements that can predict the mill performance of cotton have great potential importance.

At present, many of the largest users of American cotton complain of the processing efficiency and use value of our cotton. Recent Department of Agriculture and trade studies indicate that:

1. During the last 10 years the average staple length of the U.S. crop has held its ground, but the grade trend has been slightly downward due in part to the unusually low-grade crops of 1955 and 1957.

2. In addition to its effects on yarn and fabric quality, cotton containing "hidden damage" causes more ends-down in spinning and increase processing costs.

3. Cotton which has been over-dried and over-worked at the gin causes more "fly" in the mills, greater unevenness and more neps in the yarns, reduces the appearance-grade of the gray yarns and fabrics, and causes uneven dyeing of the fabrics.

4. About 85 percent of the domestic mills have to do at least some surface cleaning of about half the cotton bales consumed in the U.S. In addition, all mills incur certain other costs associated with the shortcomings of the cotton bale package as delivered to the mill.

The growing concern over quality during recent years is largely accounted for by: (a) rapidly changing production, harvesting, and ginning practices; (b) increasing competition in domestic markets from manmade fibers, paper, and other domestic and imported products; (c) accompanying increase in performance demands placed on raw cotton by stepped-up mill production methods, equipment, and higher mill workers' wages; and (d) need for more tools and techniques for evaluating raw cotton.

• **Need for Action** — We need to encourage greater use of cotton—not less—at this time when cotton is facing intense competition from manmade fibers. Plainly, we can best build our markets by creating satisfied customers. And to do this we must find ways of obtaining additional quality measurements, as well as ways of coping with such problems as "hidden damage" to the raw cotton and the problems of bale surface contaminants and the bale package.

An important part of this problem, of course, is that with modern harvesting and ginning equipment and present pricing practices, producers have immediate cost-price incentives for continuing present practices—even at risk of creating some "hidden damage" to cotton.

At bottom, to be sure, this is a matter of conflict between short-run advantage and long-run disadvantage. It is a key part of our quality problem. And it has no easy solution.

• **Coordinated Effort Essential** — Both in research and in educational efforts to maximize quality, greater and more coordinated efforts are essential. We in the Department have recently taken some additional steps in this direction and I believe our domestic industry and the public agencies concerned with cotton research and education are now in position—more so than in the past—to push ahead together to outstanding achievements.

Increased effort is needed to determine the quality factors affecting the suitability of cotton for different uses. Added information of this nature would help spinners buy and use those cottons which would minimize their costs and thereby help them to compete with synthetic substitutes and to increase the total consumption of cotton. In the long run it would tend to increase producers' returns.

• **Pilot Laboratory** — Under the leadership of the Agricultural Marketing Service, the Department, in cooperation with Clemson College and the trade, especially the National Cotton Council, is in the process of establishing a pilot cotton research laboratory.

The spinning portion of the laboratory will operate 1,008 spinning spindles. The new equipment includes four standard card machines, one high speed draw frame, one roving frame, and four spinning frames. In addition, a complete opening and picking line supplied by Clemson will be used jointly by the Department and the textile school. A complete fiber laboratory is being established. It will be available to this facility. Clemson College has agreed that floor space will be made available for the addition, at a later date, of combining equipment and weaving and finishing facilities.

We feel confident that this new research tool will contribute significantly to (a) bridging the gap between the present methods of evaluating cotton quality and those which would much more accurately and dependably predict the performance of any and all American cotton, and (b) in this and other ways help provide more effective and practical methods of protecting the inherent properties of our cotton.

In general such research should include the initiation or intensification of work in the following areas:

(1) Investigation of the properties of the cotton fiber and how they correlate with spinning, weaving, and finishing performance.

(2) Better, more rapid, and commercially practical means of measuring all important properties of cotton, particularly those not now being measured reasonably satisfactorily.

(3) Short-cut spinning and other processing and instrumentation procedures for measuring the spinning, weaving and finishing performance of cotton and for correlating these performances with the laboratory and commercially-used methods of measuring the properties of cotton.

(4) Better and more effective measurements of production, harvesting, and ginning practices on the properties of cotton and their effects on the manufacturing performance of cotton.

• **Work for New Laboratory**—Spinning performance tests being contemplated for the pilot laboratory in the near future involve the spinning evaluation of the following:

(1) Flame-retardant treated cotton.
(2) Mixes of cotton of contrasting fiber properties.
(3) An accelerated ends down test.
(4) Carding cleaner developed by SURDD.

Other work under way or contem-

Device To Cut Costs For Cotton Mills

■ USDA will soon demonstrate a device to cut cotton carding waste in half, saving the textile industry millions of dollars yearly. USDA says the equipment is relatively simple and inexpensive and will replace an elaborate assembly of moving parts, called "flats," on present carding machines.

Carding machines modified with this new device are termed granular cards; the word "granular" describing the surface of the new device that comes in contact with the cotton during the process of separating (carding) cotton fibers prior to spinning them into yarn.

The granular card will be demonstrated to potential manufacturers and users at the Southern Regional Research Laboratory, 1100 Robert E. Lee Boulevard, New Orleans, on March 30 and again April 3. Demonstrations will begin at 10 a.m.

The granular card has been developed by research engineers R. A. Rusca, R. S. Brown and A. L. Miller of the ARS Southern Utilization Research and Development Division, New Orleans. A public service patent will be available for licensing in April.

The new carding attachment has no moving parts. It weighs about 200 pounds, comparing with nearly 1,000 pounds for the flats it replaces. With the attachment in place, the carding machine is completely sealed, thus eliminating a major source of dust in textile mills. Upkeep is low, since only one part of the attachment is subject to wear.

plated by the Department includes an analysis of changes in quality, market value, and manufacturing potential of cotton during storage; studies of the effects of various packaging and handling methods on cost and on quality preservation; determination of most economical methods and practices in processing various qualities of cotton; and studies of cotton; and studies of problems associated with quality differentials for grade and staple length which may be utilized as guides in determining procedures in establishing and quoting differentials for other quality factors.

In order to reap the full benefits to be obtained from the pilot laboratory at Clemson, an instrumentation laboratory is also desirable. The pilot facility will help provide the true quality value of cotton in terms of processing performance and product quality.

The instrumentation laboratory, as its counterpart, would speed up the development and testing of improved instruments and techniques for measuring fiber characteristics or properties of lint cotton for correlating with the pilot findings and the results obtained in commercial operations. Improved methods of evaluating cotton quality will also contribute to needed developments in our marketing system whereby the prices at different points in the system —including farmers' local markets—will more accurately reflect the true value of cotton.

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Stop Stealing Your Own Fiber Quality

GEORGE J. HARRISON, Agricultural Consultant, Calcot, Ltd., Bakersfield, Calif.

One of the most subtle ways to steal fiber is by unseasonably late planting. Late planting, or any other device which causes the crop to develop late in the summer instead of early summer, can and usually does result in the loss of 7,000 to 10,000 pounds per square inch in tensile strength. Moreover, it results in unnatural fineness which leads to a proportionate loss in yield to the grower and may cause increased cost to the spinner and certainly adds grief for anyone trying to dye cloth made from such cotton.

Excess water during fiber elongation and cell wall development may reduce staple length to some extent, and it most assuredly results in fibers of abnormally large and irregular diameter and poor structural alignment. Insufficient irrigation is certain to result in reduced and irregular length of fiber. It will greatly increase the percentage of thin-walled and dead fiber in any location where it occurs. Continuing irrigation beyond the time when the soil contains sufficient moisture to develop fully all existing bolls which have a reasonable chance of maturing before the first killing frost in autumn will steal fiber quality and will add needlessly to growing cost. This device can reduce defoliability when the time comes, increase boll-rots, delay harvest, often into late winter or spring, with all the attendant loss in grade, color and staple, as well as tensile strength.

Nitrogen can be added to the point of diminishing returns for a particular soil. This assures bountiful plant growth, copious shedding of young squares and bolls until late summer, and ultimately lodging of plants that will create perfect conditions for boll-rots and second growth which will delay harvest and invite frost damage that surely will destroy quality in that portion of the crop which otherwise might have been satisfactory.

• **Defoliants Can Steal Quality** — When defoliants are applied prematurely, or before the last bolls are 40 days past bloom, the result is a loss of fiber weight (yield per acre) and excess fiber damage in cleaning and ginning.

The use of excess dosages of certain materials may result in the killing and setting of cotton leaves instead of dropping them. This results in gathering of unnecessary trash, particularly in machine picking. This in turn leads to extra machining, at the expense of other fiber qualities, if good grades are to be obtained at the gin.

A sure way to steal the glossy white color of cotton fiber is to defoliate longer ahead of picking than is required for the leaves to drop off the plants. Once the leaves have fallen, the cotton is fully exposed to usually intense sunlight which causes it to change rapidly from white to dull gray. It has been repeatedly observed over a period of years that the rate of change in color, as well as the intensity of change, is somewhat accelerated if even light rain occurs between defoliation and harvesting.

• **Picking Steals Fiber Quality** — Perhaps the most common and least understood device for stealing fiber quality is in the picking of freshly opened bolls before the seeds have dried fully. The basal end of all cottonseeds of commercial varieties has a corky cap. If cotton is ginned before this cap is fully dry, the cap will shatter with the fiber still firmly attached. Once such material is incorporated in a bale of cotton nothing except the most rigorous and costly combing will remove it.

One of the most certain methods of destroying fiber quality is found in picking with high seed cotton moisture. Cotton fiber destroying micro-organisms are present everywhere. Shortly after damp cotton is packed into a trailer, or any other type of storage, or in windrows, in the field, the temperature begins to rise, the mass goes into a so-called sweat, thus creating a favorable medium in which these organisms increase rapidly. Also, the PH (acid-alkali ratio) soon begins to increase, making altogether a favorable situation for fiber quality deterioration.

After 30 hours of holding cotton in such condition, brownish, charred spots begin to appear on the lint and within 72 hours the entire mass has likely changed to a badly scorched appearance, or at best, has changed from white to gray in color.

Other easy methods of stealing one's own fiber quality during harvest are to be found in the use of unclean, poorly adjusted picking machines and in the use of strippers in the type of plant growths and staple lengths commonly grown in the Western region.

• **Ginning Steals Fiber Quality** — With a tight seed roll, we can cut much of the fuzz off the seed in order to increase the gin turn-out and add to the percentage of waste.

The drying process can dissolve any of the natural waxes that have not been destroyed in weathering, drive off an excess of moisture and thus render the fiber brittle. The ability of the fiber to regain moisture during spinning will be impaired and the fibers will break more readily in each of the machining operations that is yet to follow.

By insisting upon obtaining higher grades than the condition of the seed cotton warrants, we impel the ginner to employ all of his seed cotton cleaners as well as stick remover and bur machine. While it has not been fully demonstrated that these operations reduce staple, it certainly has been found that they compound the tangling and roping of the fiber, thus contributing their prorata of waste, noil and neps about which we hear so much from the spinning mills.

We can feed the cotton faster than it can be ginned. In so doing, we consign the excess to the overflow where it is allowed to accumulate and in some ginning establishments it is eventually to be recirculated through the drying and precleaning system. It has been ably demonstrated that for that portion of a bale of cotton so re-circulated, mill costs go up about 80 cents per pound of yarn spun from it. Such a practice may result in a higher grade, but in so doing, it contributes substantially to the amount of neps, noil and waste in the bale.

On the basis of a 60-bale study in 1958, involving three different gins having at least some differences in types and operation of equipment, the net effect on staple was found to be practically identical. These 60 bales were sampled wherever practicable from the trailer to the lint slide. Until the seed cotton reached the gin stand, all samples were hand ginned, a method presumed to do little or no mechanical injury to the fiber. Some bales were first picking, others second, some machine picked and others were picked by hand. The rate of ginning ranged from five and one-half to nine and one-half bales per hour. Any defects, such as boll rots and immaturity, were noted and recorded from the samples taken from the trailer. Moisture content, which ranged from 4.0 to 15.0 percent was likewise observed at this point. Fibrograph measurements of length and Pressley strength, at zero gauge, were made under controlled con-

Buckeye "Miracles" Featured in Paper

"Modern Cellulose Miracles" created at the Buckeye Cellulose Corp. laboratories in Memphis were the subject of a feature article March 8 in the Memphis Commercial Appeal. Illustrations were colored photographs.

Buckeye was America's first cellulose producer, the article started; and today is the only firm that makes cellulose products from both cotton linters and woodpulp. The Memphis operation uses linters. Buckeye's Technical Building at Tillman and Jackson in Memphis is believed to be the most complete cellulose research center in the nation, and the largest industrial laboratory in the Midsouth. Research by some 200 employees there has included work on using cotton linters in papermaking and in developing better rayon cord for auto tires.

ditions of all samples from all points.

So far as tensile strength is concerned, no differences within the bale were found at any point except where boll-rots and related microbiological activity were known to be involved.

As already stated, no measurable effect on staple length, except shrinkage of one thirty-second of an inch from the effect of high moisture and heat, was noted until the cotton reached the gin saws. At this point, there was a certain loss in length of three sixty-fourths of an inch, often more, depending apparently on the equality of cotton being ginned. At the first lint cleaner another sixty-fourth or more was lost and at the second lint cleaner still another sixty-fourth disappeared. In the aggregate, it required a loss of from three thirty-seconds to one-eighth inch in length to take the cotton through ginning and two cleanings. In cases of severe boll-rots and high immaturity, these three operations reduced the staple as much as three-sixteenths of an inch.

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Harvesting for Efficiency and Quality

J. S. FRANCIS, JR., Valley Gin Company, Peoria, Ariz.

The 1959 season certainly presents its share of cotton problems in our Southwestern area. Obviously, we desperately need to lower our production and harvesting costs substantially in order to remain in the cotton business.

I should like to dwell briefly on the relationship of production costs and harvesting costs. Let's assume that the average production cost in the Southwest is $137 per acre, with the yield averaging two bales per acre. Everyone will agree that it would be a major step in the right direction if some method or procedure were developed that would reduce this cost 20 percent.

• **Hand Harvesting** — If this average grower is hand harvesting his two bales, he could possibly be spending ANOTHER $137 per acre. Because this harvesting has become our biggest single cost, I am going to attempt to show you how we can save even more than 20 percent in harvesting cost.

My analysis is based on figures for more than 3,000 bales. Hand picking, machine picking and stripping are compared. Each method was analyzed from the standpoint of lint turnout, seed factor, trash percentage, field loss percentage, average actual selling price, value per bale, net ginning credit or cost per bale, picking cost per bale and net return per bale before growing cost.

The weighted average of all hand picked bales (756 bales produced on 426 acres) shows an average actual selling price of 33.55 cents, value per bale of $167.78 and picking cost per bale of $39.64.

This leaves net return per bale before growing cost of $108.78.

• **Machine Picking**—The weighted average of all machine picked cotton covers 1,028 bales produced on 466 acres. The average actual selling price was 31.86 cents, value per bale $159.28 and picking cost per bale $27.14.

This leaves a net return per bale before growing cost of $132.29.

All stripped cotton analyzed included 1,329 bales produced on 720 acres. Actual selling price averaged 31.27 cents, value per bale was $156.35 and picking cost per bale averaged $24.93.

The net return per bale before growing cost is $131.76.

If we assume that our average field loss, which was 13.91 percent for all machine picked cotton, cannot be recovered, we must substract $18.37 from our $132.29 net return per bale before growing costs for the machine picked cotton. It is interesting to note, however, that we are still ahead of the hand picking cost of $108.78.

What if we machine pick and pay a custom rate of $2 per hunderd? We would lower our net return only to $121.41, which still gives us a larger return than hand picking.

Comparing quality, we see that the difference is only $8 to $11 per bale, which indicates a loss of more than one-half of one grade.

Thus, these figures on 3,000 bales show a net difference of over $23 per bale in favor of machine harvesting.

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Effect of Drying And Cleaning on Fiber Quality

JOHN E. ROSS, Agricultural Economist, USDA, Stoneville, Miss.

To provide a basis for dependable conclusions, the Agricultural Marketing Service, in cooperation with the American Cotton Manufacturers' Institute, National Cotton Council and Institute of Textile Technology, initated a commercial mill test in the fall of 1957 to determine the effect of gin drying and cleaning practices on fiber qualities, mill processing performance and costs. Forty-eight bales of relatively uniform, machine-picked cotton from a field in California were divided into 12 lots of four bales each and subjected to different drying and cleaning conditions. Standard fiber and spinning tests were made. Mill data obtained included fiber measurements made of samples taken after the lots were subjected to cleaning machinery in the opening room, after the picker, and after the card. Data were also obtained on manufacturing waste; ends-down in spinning; loom stops in weaving; and appearance and strength of the yarn. Evaluations of the cloth in the gray state and in the dyed state, after bleaching, were also made.

Fiber Properties and Processing Performance

It was definitely established that the most severe damage to fiber qualities and mill processing performance resulted from overdrying of seed cotton during the ginning process in combination with the use of elaborate overhead seed cotton cleaners, bur extractors, and double lint cleaning. By overdrying, we mean the reduction of moisture in lint cotton to a level of three percent or less, as compared with a lint moisture content of five percent or more at time of ginning. While grade was improved by these practices, it was shown also that similar grades can be obtained by the use of less drying, in combination with less overhead cleaning and two lint cleaners.

Large differences in fiber quality resulted from different moisture levels for the same overhead and lint cleaner condition. However, within any one overhead condition and for any one moisture level, most fiber quality measurements showed little or no change from lint cleaning. When spinning performance was related to each condition, there was a consistent increase in ends-down and loom stops with increased use of overhead cleaning and drying equipment.

• **Latent Effects** — Another interesting relationship exists in several quality measurements of samples taken at various stages in ginning or manufacturing. Although no apparent differences in some of these measurements appear in the ginned lint, significant differences do occur in processing at the mill. This shows the latent effect which gin practices may have on cotton. Cleaning at the commercial mill used in this test must be considered as a minimum amount as compared with other mills.

The most important quality measurement indicating processing performance was the proportion of cotton fibers shorter than one-half inch. Approximately 64 percent of the variation in ends-down in spinning 30s yarn and 86 percent in spinning 40s yarn was accounted for by variation in the proportions of short fibers. On the average, an increase of one percent in short fibers was associated with an increase of 13 ends-down in spinning 30s yarn and of about 60 in spinning 40s.

Short fibers also had a great influence on yarn strength. Variations among the test lots for this factor accounted for, or were associated with, 80 to 90 percent of the variation in break factor of test yarns.

• **Length Varies** — Forty-two percent of the variation in short fibers was associated with variations in lint moisture content at time of ginning. Although this correlation is quite high, findings also suggest that factors are important in accounting for the remaining 58 percent.

Overhead cleaning machinery had no significant effect on the amount of short fibers in the ginned lint, but again the latent effect of this equipment was shown by a highly significant increase in short fibers in the cotton at subsequent stages of processing. Samples taken at the card showed that elaborate overhead equipment increased short fibers slightly more than one percentage point as compared with an overhead set-up which by-passed the bur machine and one seven-cylinder cleaner when lint moisture content was relatively high.

The lots of cotton subjected to the most extreme drying and cleaning conditions, and which yielded the highest ends-down and weakest yarns, also had the highest number of loom stops. About 45 percent of the variation in warp stops and over 95 percent of the variation in filling stops was associated with corresponding varation in ends-down.

• **Raw Material Costs** — The test lots ranged from Low Middling to Middling

in grade, which, on the basis of the wide price differentials existing in 1957, was equivalent to a difference in market value of 719 points per pound, or $35.95 per 500-pound gross-weight bale. This difference was about $31.65 per bale when weights were adjusted for bagging and ties and differences in manufacturing waste in the sale of savage.

• **Labor Costs** — Labor costs for yarn and cloth increased significantly when cotton was overdried. With elaborate overhead, the use of two lint cleaners increased spinning labor costs by 0.8 cents per pound of cloth. Weaving labor costs increased by 0.6 cents per pound of cloth, for a total labor increase of 1.4 cents per pound of cloth.

With elaborate overhead, two lint cleaners and lint moisture levels relatively high, spinning and weaving labor costs are 1.7 cents per pound of cloth lower than for overdried cotton processed with the same cleaning machinery, or about $8.50 per bale.

At relatively high lint moisture levels, elaborate overhead machinery added approximately 0.8 cents per pound in additional spinning and weaving labor costs, as compared with moderate overhead cleaning. For this smaller amount of cleaning machinery, operated to produce lint moisture content in the six percent range, the use of lint cleaners produced increases of about 0.1 cent per pound of cloth.

An evaluation of cloth revealed that rankings varied irregularly with differences among lots subjected to different treatments in respect to moisture and number of lint cleaners used in both elaborate and moderate overhead cleaning groups. Over-all, there was not more than 0.25 cents per yard of difference in the highest and lowest ranked gray goods.

In the dyed state, however, cloth defects were more noticeable and the evaluation committee stated that the lots ranked from seven to 12 were unsuitable for usual print cloth outlets. Significantly, five of the top ranked six lots were from cotton ginned with moderate overhead cleaning and with moisture levels in the high range.

• **True Cotton Quality** — Suppose that these properties were known, means were available to measure them and premiums or discounts were based on these factors in the 1959 crop? As producers and ginners, what effect would it have on your operations? Accustomed to thinking largely in terms of grade and staple, what would be your reaction to a system which measures spinning quality and performance as well as fabric quality and bears little relation to the system we have known for so long?

An indication from last year's operation might well be of value to us. All of us recall the disastrous year of 1957 in most of the Cotton Belt, when there was a definite shortage of cotton in the higher grades and grade differentials widened markedly. Reflecting the wider market differentials of the preceding season, loan differences for 1958 between Middling and Strict Low Middling cotton, one and one-sixteenth inches in length, amounted to slightly better than $21 per bale. Yet the 1958 market demand for the higher grade cotton was quite weak, but Low Middling and Strict Low Middling cotton usually brought a premium over the loan value.

Price was one of the more important reasons why the higher grades did not move directly to the mills. However, it also appears logical to reason that at least some mills have learned that they can use the lower grades at a somewhat cheaper price, produce a better quality product, and with less processing costs. In other words, in the absence of devices to measure quality elements not specifically known at this time, Middling cotton, produced and ginned under mechanization, is being discounted on a blanket basis.

• **Your Role** — What can you as producers and ginners do in 1959 to preserve cotton's inherent qualities? In the six or seven minutes in which it takes to gin a bale, the producer, through pressure on the ginner, can largely destroy those quality elements he has spent many months and large sums of money to produce. We can insist on Middling and Strict Middling grades from trashy and wet machine-picked cotton, gained by the use of very elaborate overhead seed cotton cleaning facilities and lint cleaning in combination with drying temperatures which reduce the lint moisture content from a normal five to six percent down to three percent or less.

This instance will destroy those elements we cannot measure at the present time, and on which the merchant and mill cannot place a value—until after the cotton reaches the spinning room. Then it's too late to do anything about that cotton. However, you can rest assured that the mill superintendent passes this information on to his buyers, who in turn transmit such information to their local contracts. In the final analysis, specific gin points are embargoed, and even areas are designated as being substandard in terms of quality.

A good part of the mechanically-picked cotton in the West arrives at the gin in a relatively dry condition. Moisture content of the lint, while attached to the seed, is five to six percent. Certainly, this would warrant bypassing one drier and operating the second drier at a very moderate inlet temperature. This would, in most instances, also involve bypassing the master bur machine and opening cylinder cleaner. If lint cleaners are used, grade levels would be largely maintained, desirability of the ginned lint would be greatly enhanced and weight losses would be minimized.

Reduction of lint moisture from five to three percent reduces the bale weight by 10 pounds. More fuel is consumed, costing approximatly 15 cents per bale. Reduction of staple length, often by one-thirty-second inch, and the additional trash removed by excessive drying are other factors that should be considered. Frequently, these losses can offset any increase in price per pound. I believe all of you will agree that it is likely that loan levels for the higher grades will be considerably less than those in 1958. Therefore, weight losses exchanged for higher grades will be even more important to the producer.

• **Summary** — You producers will determine the type of job your gin will perform by the condition of the material which you bring to the gin and by your demands for grade at the expense of true quality. A gin can only preserve or destroy these elements of true quality, whatever they may be—they cannot be improved upon by the gin once cotton has left the field.

Basically, the producer, the ginner, the merchant, the mill and the consumer all have one vital interest in cotton—that of producing, maintaining, and utilizing those qualities which make it the outstanding fiber that it is. Therefore, true cotton quality is necessary to the economic welfare of all concerned. United, the industry can solve its problems in a manner that will benefit all concerned. Divided, we will see an increased use of substitutes, and experience has taught that a market once lost is one that is hardly ever regained.

◆ ◆

Change Arkansaw?

Famed Speech Edited For Gentle Reader

CHITLING SWITCH, ARK.

DERE MR. EDITOR:

I guess you half heard that there speech that was made in the Arkansaw Senate way back yonder by Sen. Cassius M. Johnson, Senator from this here County where the Switch is at and I want to tell you that I half heard it misquoted so many times that I want to get it straight for the record. They was a senator that brought in a bill that wanted to change the name of Arkansaw and this here made Sen. Johnson see red and this here is the speech that he made but maybe you will have to put some words in the place of the ones I am putting down but if you half any sense at all you can do it:

He said—Mr. President for 30 min. I been trying to get your eye and when I did you set there and wormed turned and twisted like a dog shot in the back with a load of carpet tacks. I understand that it is the motive of some so and so in this here august body to change the name of Arkansaw. Suh I come from Jackson County where a man cant stick his head out of the window to spit without getting it riddled with buckshot and I was 15 yrs old before I wore a pr of britches and they was made of buckskin and at the age of 18 I had a fist as big as a roasting ear and if I do say it myself it was the pride of Jackson County now Mr. Pres. you can defile the grave of Geo. Washington pour water on the tomb of U. S. Grant —— the Goddess of Liberty and use the stars and stripes for —— ——, but your crime would no more compare to that of changing the name of Arkansaw than smoking manure on the top of a compost heap would compare to the sun-kissed peaks of the Ozark Mountains or the bray of a Mexican burro to the melodious strains of Mozart or the puny appendix of a Peruvian Prince to the monstrous guts of a Roman Gladiator. Mr. Pres. I say to you and all the Senate CHANGE THE NAME OF ARKANSAS—NEVER SUH!

This is a pretty authentic copy of the speech but you will half to change some of it as I half already told you.

YOUR'N,

B. Ubberson

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DALLAS, TEXAS

Oil Mill Managers Meet With Memphis Board

Midsouth oil mill managers met March 12 with Memphis Board of Trade members to discuss operations and broadening of services. The Board was host at lunch.

Speakers on the program included James W. Phelan, Clearing Association chairman; Paul B. Mulroy, Board president; Arthur A. Williams, executive vice-president; Leroy C. Gaston, Standard Commission Co.; and Fred C. Lovitt, Harry D. Tobias, Richard W. Miller and Grider Wiggs, all representing the Board in a panel discussion; and W. G. Phillips, Jr., Union Planters National Bank.

Producers To Meet April 2

Missouri Cotton Producers' Association will have Senator Herman Talmadge as the principal guest speaker April 2 at its annual meeting.

Cotton Linters

(Continued from Page 20)

steps, resulting in lower manufacturing costs.

The progress made by chemical wood pulps in rayon and acetate production is shown in Graph II. The growth has been from 45,000 tons in 1930 to about 400,000 tons in 1947 and to about 500,000 tons each year since 1951. This compares with the considerable drop in linters pulp from about 100,000+ tons in the period 1945-1950 to 49,000 tons in 1957.

One very important incentive for the continued search by the rayon and acetate industry to use even larger proportions of chemical wood pulp has been the stable, low price of these pulps.

During the past 10 years the prices of wood pulp for use in the manufacture of high tenacity rayon have been as follows:

LOW	$.0805 per pound
HIGH	$.0975 per pound

The average price for the past six to seven years for high tenacity grade wood pulp has been steady at $.0975 per pound. (See Graph I).

By comparison, the corresponding grades of linters pulp have varied as follows during the past 10 years:

LOW	$.10 per pound
HIGH	$.257 per pound

From these figures it is easy to understand why manufacturers of chemical products engage in cooperative research with pulp producers to develop wood pulps suitable for specific products. Once these cooperative research projects are successful, they mean the loss of a market for linters pulp due to its fluctuating and higher price.

The prices of first cut and mill run linters have varied as widely in the past 10 years, as have second cut linter prices, as indicated by the following:

First Cut Linters

LOW	$.079 per pound
HIGH	$.22 per pound

Mill Run Linters

LOW	$.044 per pound
HIGH	$.172 per pound

In almost every product in which linters are used, they compete with some other material. The National Cotton Council in one of its surveys stated that, "A majority of consumers stated that price, in most cases, is a principle factor governing the use of linters in reference to competing products."

TABLE III — U.S. LINTERS PRODUCTION, SUPPLY AND CONSUMPTION (3)

Crop Year Beg. Aug. 1	(2) Linters Produced Running Bales (1000 B.)	Imports Calc. to 500# N.E. (1000 B.)	Exports Running Bales (1000 B.)	(1) Stock Reported on Hand Aug. 1 (1000 B.)	Total Supply Running Bales (1000 B.)	Total Linters Consumption Running Bales (1000 B.)	Bleachers Consumption Running Bales (1000 B.)	All Other Consumption Running Bales (1000 B.)
1948	1646	96	193	370	1919	1406	841 (60%)	565
1949	1710	167	189	495	2183	1616	968 (59%)	648
1950	1244	87	92	452	1691	1396	809 (58%)	587
1951	1768	94	226	264	1900	1306	800 (61%)	506
1952	1799	283	107	548	2523	1359	778 (58%)	581
1953	2003	137	237	1111	3014	1324	808 (61%)	516
1954	1699	154	256	1543	3140	1474	884 (60%)	590
1955	1703	170	396	1491	2968	1789	1110 (62%)	679
1956	1507	113	334	1025	2311	1438	811 (56%)	627
1957	1246	114	183	824	2001	1100	550 (50%)	550

(1) These figures do not check the difference between Total Supply and Total Consumption. The reported supply on August 1st may be incomplete.

(2) Includes oil mills, gins and delinting plants.

(3) Source - U.S. Department of Agriculture Marketing Service.

• **Future for Cotton Linters**—In the non-chemical field, first cut and mill run linters supplemented with some second cuts have good acceptance in the felting and padding industry. Linters possess important felting properties: resiliency, moisture and heat absorbency, flexibility and freedom from odor. Their use in this field should continue at a high level.

Linters' main competition for felting is **cotton waste** which has the advantage of longer staple but lacks the desirable fiber resilience. **Foam rubber** is the largest non-cotton competitor of linters in mattresses and automobile seats with apparent increasing public acceptance. Other competing materials are animal hair, sisal, glass fiber and cotton staple.

For the production of medical supplies, linters' cleanliness is important, namely, the absence of hulls, leaf trash and dirt. This is equally important for chemical pulp producers.

With the advent of increased mechanical harvesting of cotton, more boll, leaf trash and dirt have found their way into cottonseed. Oil mill operators have installed equipment to remove much of this foreign material but the chemical bleachers have found it necessary to install extensive additional linters cleaning equipment to reduce trash and dirt to the levels required by the chemical trade. This is an important linters quality problem since the foreign material affects the processing cost and quality of the rayon and acetate end products.

Cotton linters dissolving pulp has almost priced itself out of the high tenacity rayon cord market. Its quality advantages are slight and its rayon processing

ROBERT C. JACKSON

EARL COKE

Speakers for Crushers' Convention in May

TWO SPEAKERS for the National Cottonseed Products Association convention in San Francisco are shown here. Earl Coke, vice-president of the Bank of America and former California and USDA Extension Service official, will discuss "Agriculture in a Prosperous Economy" on May 11. Robert C. Jackson, executive vice-president, American Cotton Manufacturers' Institute, will talk May 12 on the outlook for the U. S. textile industry. Mark Hopkins and Fairmont Hotels will be headquarters.

costs are reported higher than those obtained with the corresponding grade of wood pulp. On this basis it will be difficult to recapture this market even at equal pulp costs.

Linters dissolving pulp has a definite quality advantage for acetate plastics where color and color stability is of prime importance.

Because of an average higher price, linters have lost a considerable portion of the acetate fiber market. There are definite quality advantages for the use of linters pulp in acetate fiber production; as, for example, lower chemical cost during acetylation, easier processing, and handling of spinning solution, hence greater yield of stronger yarn.

There are also definite acetate yarn color advantages. The pile sections show a blue-white compared to a yellow shade for wood pulp acetate yarns, hence lower fabric bleaching costs. In addition, linters acetate yarn has higher tenacity, hence greater weaving and knitting speeds are possible and the finished fabrics are more stable on exposure to light, heat and weather. On the basis of these quality advantages, linters pulp should find an extensive market in acetate fiber production provided supply and competitive price can be maintained.

For the production of photographic film, linters pulp has a definite quality advantage. The high purity linters pulp producers haze-free acetate films having the necessary clarity and color stability.

Linters pulp is also preferred for the production of sausage casings because it imparts desirable wet strength and heat resistance.

In the past two to three years, much research and development effort has been expended in the chemical and physical modification of purified linters. One goal has been the production of high grade bond paper having good strength and permanence of color as a replacement for cotton rag papers.

White cotton rags and clippings have been used by paper manufacturers for years for the production of the highest strength papers for ledger and court bonds, currency, paper, etc. Recently the quantity of usable rags and the quality of available rags has been poor because of contamination with a variety of synthetic fibers.

Chemical modification of linters has shown promise for producing papers having the desired strength and fold resistance required by the paper industry for the production of premium quality papers.

Another area of research and development interest has been the chemical modification of linters for the production of non-woven fabrics. This is a field having considerable potential but it is too early for any predictions.

In the specialty paper field, linters pulp has made progress for such uses as filter papers, saturating papers, for use in the production of battery separators, cabinet and panelling laminates, and printed circuits, also air filter papers and a variety of others.

• **Summary**—All of these are areas of much interest and considerable promise which may develop additional linters pulp outlets. However, it appears to this writer that linters pulp must recover its share of the high tenacity rayon market where its past performance has demonstrated its worth. Also, it must recover and strengthen its position in the acetate and cuprammonium field where its special quality features have been recognized.

It can only do this, however, by having steady supplies of linters pulp available at prices competitive with the better grades of wood pulp, since rayon and acetate producers cannot change back and forth from linters to wood pulp.

Perhaps the keen competition from the improved grades of dissolving wood pulp is a blessing in disguise, as it will force linters pulp to remain competitive with the best grades of wood pulp and thus permit linters pulp to claim it merited share of the market based on its intrinsic properties and technological development.

Firm Moves to Dallas

Volkart Brothers, cotton firm, is moving from New Orleans to Dallas as headquarters for its U.S. operations. A. Owen, who has been with W. D. Felder & Co., will become vice-president and Dallas manager for Volkart, which occupies the former Felder offices in the Dallas Cotton Exchange.

Textile Outlook Improved

"Modest improvement" in business during 1959 is seen by Dan River Mills President William J. Erwin. He called attention to firmer textile markets and an improved inventory situation.

Widow of Founder of Oil Mill Dies in Memphis

Mrs. Maria Giles Cross Fleming, widow of the founder of one of the nation's oldest cotton oil mills, died March 6 at Memphis. Her son, I. H. Fleming, Jr., is the present head of the firm, DeSota Oil Mill at Memphis.

Mrs. Fleming was a descendant of early settlers of Virginia and Maryland. One of her ancestors, the late Temperance Baley of Jamestown, Va., was the first English woman to receive a land grant in her own name. Another ancestor, the late Rev. Thomas Horrell, founded the first Episcopal Church west of the Mississippi. The church is now the Episcopal Cathedral of St. Louis.

Mrs. Fleming was a communicant of Grace-St. Luke's and formerly taught in the Sunday school of old St. Luke's Episcopal Church. She also was active in the church auxiliary and was a member of the King's Daughters. She was a graduate of Southeast Missouri State College at Cape Girardeau.

Mrs. Fleming leaves two daughters, Mrs. Francis D. Gardner and Mrs. Duncan Mallory; three sons, Irvin Hunter Fleming, Jr., J. W. P. Fleming and William G. Fleming, all of Memphis; two sisters, Mrs. Andrew B. Lawson of Memphis and Mrs. Virginia Cross Cleary of Jamestown, Miss.

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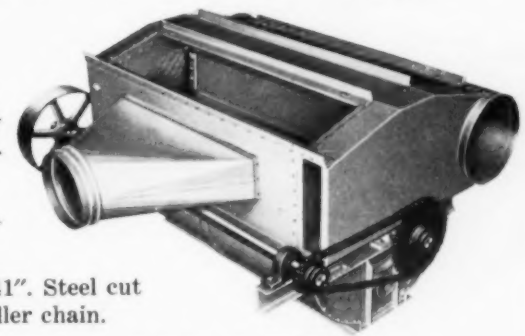

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Write for Bulletin No. S-21

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Cotton Plans or Couches

Don't Ever Give Wimmen No Choice

CHITLING SWITCH, ARK.

DERE MR. EDITOR:

This here A plan and B plan I guess is all right for men but if theys any women farmers in the south it will be gin whistling time before they can select the plan they want to go by because you put any two things before a woman to make a pick from and you got trouble on yore hands.

I jest hope that the govt. will not decide to print four-cent stamps in two colors because if it does and a man goes up to the PO to buy some stamps he will probably find a line about one-half block long of women in front of him trying to make up their minds about what color they want and it will take maybe an hour or two for a man to buy four bits worth of stamps and I know what I am talking about because when the Mrs. and me got married we went to the city to buy some furniture and she made me go along with her and after we had walked about seven miles from one store to another she finely got what she wanted and the last thing that she bought was a couch and she made a selection and this here salesman that waited on us said that they had jest received a shipment of new couches that would be put on display the next day and Mr. Editor we stayed in that there city for the next two days while she was making up her mind about the couch and I wondered why this here salesman had told her about the other couches since he already made the sale but he paid for it because it cost him might near two days time and she bought the couch that she picked out in the first place.

Funny things shore do happen like that feller that raised wheat to feed his own chickens on his own land and the govt. slapped a fine on him which he fit and finely gave in and moved to Australia and I dont think it was right at all no more than I think it aint right for the govt. to spend all this here money all over the world without giving taxpayers a chanct to vote on it and another thing if you was lucky enough to own any gold the govt. will crack down on you if you keep it and you got to half a govt. license to do anything except to play mumble peg or old sow. You take me now I am too old to worry about it but about 10 or maybe 15 yrs. from now if folks dont stop being so complacency about what is going on in this here country they are going to half to buy a license to wear britches if they got any britches by that time.

YOUR'N,

B. Ubberson

CHITLING SWITCH, ARK.

DERE MR. EDITOR:

I guess you git to look at a magazine ever once in a while and see all about these here contests free presents and cheap presents that they put in the ads and they is a lot of them that offer a pillow slip full of money if you finish a sentence in 25 words telling that you like something because—and you are supposed to finish that.

Now it aint necessary for me to tell you that a contest like that is for men only because you know as well as I do that no woman ever could tell why she liked or didnt like something in a whole sentence of 125 wds much less finish one in 25 wds because all the women I ever knowed like to talk but it is shore a pity that they never say nothing and you cant tell them that. You ast a woman what time is it and she will look at her wrist watch and begin a long talk about where she got it and this that and the other and in about five or 10 min. you will maybe git the time and then she will say oh I forgot to wind it but of course us men understand these here women and we dont think nothing about it.

It minds me of one time when I was in mgr of a mill and I had a lady competitor that was managing a mill not far away and she stepped on my toes a couple times and it hurt and so I decided to call at her mill and find out what it was all about because I knowed that any woman would talk her head off if she got a chanct but I am telling you that I drawed a blank and all that there lady would do was to jest nod or shake her head and when I left I thought I would sure be able to get her to say one word and I ast her what day of the month it was and she pointed to a calendar with her thumb. I was glad to git out but about a yr later I ran into her in a Mfs hotel and she came up and was right friendly because I was not no longer a competitor but I give her the cold eye and I said lady I aint never seen you before in my life and she reached over and straightened my necktie and she said dinners on me so come on and she give me a bums rush for the door and since I aint never been rough with no lady I come with her and she took me to a highcollared night club and we had dks and a big steak and I got real acquainted with her but I tell you Mr. Editor that these here women either talk too much or they dont talk none and you jest take yore choice.

One time they was a feller by the name of Shakspeer and I dont guess you ever heard of him but he done a lot of writing and he written a book called Hamiit and he had a man in it by the name of Polonius and I dont know why because Polonius is a greek name and this here feller was supposed to be a Dane but anyways this here fellow Polonius give his boy some advice in Act No. 1 of Scene No. 3 and I wish ever member of the cabinet, the congress and the brass pounders union would learn it by heart and I wish you would read it mighty careful I had to learn it by heart when I was a shaver but I never shaved nobody at that but I would half had my britches blistered if I did not do what the teacher said. Mr. Editor pay attention to what P. says about lending and borrowing and maybe you wont like what the big boys in Wash. think.

YOUR'N,

B. Ubberson

• California Plants Are Bought by Drew

TWO CALIFORNIA PLANTS processing oilseeds have been bought by E. F. Drew & Co., New York.

Malaga Oil Products Co., Lindsay, Calif., now becomes Malaga Division of Drew; and Strathmore Oil & Fat Co., Strathmore, will operate as Strathmore Vegetable Oil Co.

John M. Hagerty has been appointed general manager of Drew's West Coast operations, as well as continuing as sales manager. James Fowler will continue to manage the Malaga and Strathmore operations.

"Southern" Planter Returns

Navy Lieutenant Vernon N. Houk, the only man who ever grew cotton near the South Pole, has returned from 13 months in the Antarctic. He is visiting his parents, Mr. and Mrs. Guy Houk at Firebaugh, Calif. Lieutenant Houk obtained some cottonseed to plant while at the South Pole Station, as reported in The Press at the time.

Texas Ginners To Meet

(Continued from Page 14)

companying this article shows the location of various events at the Fair.

Gin Machinery and Supply Association officers include Donald F. Mitchell, vice-president; A. G. Falk, secretary; and Ray Senter, treasurer. They serve on the executive committee, with U. H. Ohrman, Carsey Manning and Walter B. Moore.

• **Entertainment** — Entertainment this year has been planned to have an increased appeal for members of ginners' families. Social activity will begin on Sunday evening with the annual directors' banquet, which will be held at the Dallas Athletic Club.

Monday's entertainment will include the ladies' party at 10 a.m. in the convention hall; the all-cotton fashion show at 2 p.m. in the State Fair Music Hall; and a new type of entertainment this year, three hours of free carnival rides on the famed Midway of the State Fair. Ginners, exhibitors and their guests will have exclusive use of the Midway from 7:30 to 10:30 p.m. Monday.

Tuesday's business program will be supplemented by another first-time feature, a Fun Party starting at 10:10 a.m. in the convention hall.

Final entertainment will be the annual dance on Tuesday evening, to be held in the convention hall as it was last year.

• **Officers and Directors** — Officers of Texas Cotton Ginners' Association this year, in addition to Wilemon and Bush, have been R. L. Horton, Waxahachie, vice-president; and James Walsh, Mission, chairman of the executive committee.

Other members of the executive committee are: R. L. Massey, Pilot Point; C. L. Walker, Jr., Temple; Martin Teinert, Walburg; Wilmer Smith, New Home; R. K. Phillips, Sugarland; Jake Caprielian, Crockett; W. L. Smith, Ralls; and Roy Forkner, Lubbock.

Past presidents of the Association who serve as honorary advisory members of the executive committee are: Max C. Smith, San Marcos; H. P. Donigan, Brookshire; Aubrey L. Lockett, Vernon; W. J. Ely, Snyder; W. O. Fortenberry, Lubbock; S. N. Reed, O'Brien; J. W. Jalufka, Violet; and Horace Etchison, McAllen.

Aubrey L. Lockett

(Continued from Page 12)

ganization to which he belongs, but it wouldn't be much of a golfing organization if other members did not have more time for golf than Aubrey does. He enjoys golf, but there always seems to be something else he has to do (and the list of activities may explain why!)

When the Country Club was tearing down its old quarters to build a new home, they reminded Aubrey to come clean out his locker. Digging through the disintegrating golf togs in the locker, he came across a scorecard showing that it had been 15 years since he had played a round of golf on his home course.

• **Jewell Keeps Busy, Too** — He enjoys baseball, as Jewell does, but his real interests are in doing anything that Jewell and Linda (whom we should have mentioned long ago) want to do.

Linda is the pretty, popular Lockett daughter. She is a freshman at Texas Technological College this year, and last year was head cheer leader at her high school. She kept Jewell so busy taking kids to high school activities that, when the end of the year came, the coach gave Jewell an award, too—for the "one who travelled the most with the team."

Jewell was travelling, again, when we gathered the information for this story. She had been in Atlanta for the National Cotton Council meeting, and was bouncing along in a bus with Aubrey as we made the American Cotton Manufacturers' Institute grower-ginner mill tour. She was anxious to get home, though, to do something that would have made us never want to get home—300 rose bushes needed pruning.

Her love of flowers and other growing things keeps her busy at home unless Aubrey persuades her to go on one of his numerous business trips. There is one other exception, too— since Linda went to Lubbock to attend Texas Tech, it's very easy to get Jewell and Aubrey to the Lubbock vicinity.

• **"Always Look for Something Better"**— The fact that Aubrey was making the mill tour, after a long, busy week at the National Cotton Council annual meeting which keeps its directors and officers working every minute, is a clue to his character. As a producer and ginner, he toured mills to look ahead into the future of cotton.

Aubrey has always looked ahead, and he is planning for the future of cotton now just as he was doing 35 years ago, or longer. For example, when the Texas Experiment Station system developed its new Blightmaster cotton, Lockett Seed Co. was a leader in making this adapted variety available to growers of West Texas.

This spirit of looking into the future makes cottonseed breeding appeal to Aubrey more, perhaps, than any of his other business interests.

"The successful seed breeder has to stay ahead of the demands from the growers and the spinners," he told us. "Because of the rapid progress that is being made in research by these two segments of the cotton industry and the intricacies of the plan of nature, the cottonseed breeders' job will never be finished. We always must be looking for improvement and something better."

Is it any wonder that a hometown boy made good when he has always "looked for something better?"

Leaders Welcome Maid at Phoenix

THREE LEADERS in developing the program of the Western Cotton Production Conference, held in Phoenix this year, are shown with the 1959 Maid of Cotton, Malinda Berry. The men, left to right, are Cecil Collerette, past president of Arizona Cotton Growers' Association and chairman of the National Cotton Council's Production and Marketing Committee; Claude Welch, director of the Council's Production and Marketing Division; and E. S. McSweeny, executive secretary of the local host organization, Arizona Cotton Growers' Association. The picture was taken at the reception given for visitors by the Arizona Association.

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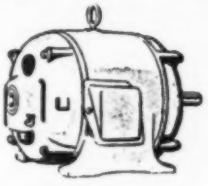

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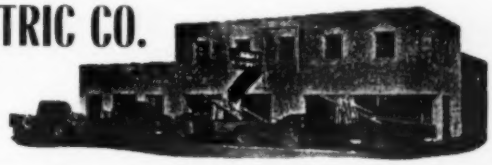

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Situation Not "Rosy," but . . .

Gossypol-Free Seed Has Big Potential

THE SITUATION with reference to developing gossypol-free cottonseed and using it in oilseed processing is not as "rosy" as many may have expected, but the potential value to the cotton industry is enormous.

Dr. Harold Loden made these comments in a report at the recent Cottonseed Processing Clinic in New Orleans. The speaker is manager of Paymaster Farm, Plainview, Texas. USDA and Valley Oilseed Processors' Association sponsored the Clinic.

"Major problems," Dr. Loden said in his summary, "must be solved by cotton breeders and by oil mills. The economic aspects are still unevaluated . . . but we must consider the development of basic gossypol-free breeding material to be one of the major cotton breeding achievements of this century.

"We must continue and expand our efforts to capitalize fully on the potential value of this discovery; and, at the same time, must recognize that we may have to adjust our thinking regarding the time interval involved."

• **Glandless Character Found** — The original genetic character which makes possible the development of gossypol-free cottonseed was isolated by Dr. Scott McMichael, U. S. Cotton Field Station, Shafter, Calif.

"Considered in its most elementary form," Dr. Loden said, "the development of gossypol-free cottonseed is simply a matter of eliminating the pigment glands. The glandless line isolated by Dr. McMichael is essentially glandless and consequently very low in, or free of gossypol. Verification of the hypothesis that gossypol is associated with the pigment glands has been substantiated by several laboratories in which gossypol content has been found to be in relation to gland number."

• **Research Surveyed** — Dr. Loden reported on a survey he had made of research being done by state, federal and private breeders. This indicated that research is being conducted in 13 states but, he commented, "it appears that possibly both institutional and private cotton breeders may have become too engrossed in the 'romantic' aspect of developing gossypol-free varieties. I would suggest that the cotton and cottonseed industry as a whole would profit from more basic research designed to develop fundamental information relative to all phases of the problem. The need for more basic information is implied in the variety of answers given on a recent questionaire asking for an estimate of time involved before low-gossypol strains might be considered for commercial release.

"The average reply indicated seven to 10 years would be required, with some replies indicating as much as 20 years or an indefinite length of time. Such statements indicate that the best approach to reduction of this time interval may be concentration by qualified individuals on development of fundamental information regarding the genetics, physiology, chemistry, etc., of the glandless character."

• **Potential Value**—Dr. Loden expressed the opinion that the advantages of low-gossypol content of cottonseed appear most likely to be realized in the reduction of oil mill operating costs, with improved ease of processing.

The second major advantage is the possibility of opening up the large volume market for cottonseed meal as a poultry feed, he added.

• **Problems** — Dr. Loden listed the following major problems:

The first problem is associated with breeding and commercial release of low gossypol strains. It is self evident that low gossypol varieties must be equal to the best commercially available varieties adapted to any production area for all characters such as yield, fiber properties, etc. We cannot overlook the fact that cottonseed are a by-product in the production of lint. The difference in per acre return of lint versus cottonseed makes it apparent that a small reduction in yield could not be adequately offset by a major increase in price of cottonseed.

"The next problem associated with breeding is the time interval. It is evident that low-gossypol varieties are not to be expected as a reality in the immediate future. We must also recognize the necessity of accumulating more basic information rather than hurried attempts by cotton breeders to develop commercial low-gossypol or gossypol-free varieties.

"Probably one of the greatest problems facing the industry in utilization of low-gossypol varieties, when developed, is limited to that portion of the Cotton Belt east of the New Mexico line. From this point eastward the selection a matter of individual judgment and varieties developed by private cotton breeding firms occupy a majority of the acreage. In any area a number of varieties may be grown, and it is immediately apparent that the seed of low-gossypol varieties cannot be segregated at the gin or oil mills.

"In areas where one variety of cotton is grown the seed could be pure at the gin. However, few, if any, oil mills would be able to maintain the identity of such seed after it leaves the gin. It must be recognized that the maximum potential profits from low-gossypol varieties can be realized only after such varieties have been developed to replace essentially all present varieties. Such will greatly increase the time interval required before oil mills may expect to receive gossypol free seed in adequate volume to permit full appraisal of the economic aspect of this character. It is evident that in one variety areas, such as the San Joaquin Valley of California, where variety planted is determined by law, this problem would be minimized."

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At Surprise Party

Friends Honor Ronnie F. Greenwell

RONNIE F. GREENWELL, Missouri cotton ginning leader, was the surprised honor guest of the Hayti, Mo., Lions Club on March 3. Greenwell thought that he was to be the speaker at the meeting of about 100 persons assembled to pay tribute to his outstanding achievements.

Events of Greenwell's life, from the time when he came to Hayti as a small boy to the present were highlighted. His membership in the Lions Club in 1927 and the many offices he held in the organization on the local, state and international level were outlined.

The following people took part in recounting the life and career of Greenwell, Mr. and Mrs. Bob Coleman, Ronnie's daughter and son-in-law of Portageville, his wife, Mrs. Greenwell; Marlin Bell, Mr. and Mrs. Virgil O. Garrett, Mr. and Mrs. Mib Masters, and Dr. Harry E. Goddard, Lions International director.

Dr. Goddard presented the International Lions President's Medal to Greenwell. This is the highest honor in Lionism, presented for outstanding and meritorious service. The Hayti Lions Club presented a plaque to Greenwell through President C. W. Reed, III. Virgil Garrett presented him with a painting by Mrs. A. G. Sanders, Sr., of his favorite fishing spot on Wolf Bayou. The painting was framed by Mrs. G. W. Yates. A bracelet to commemorate the occasion was presented to Mrs. Greenwell from the Lions Club by Camille Huber.

Greenwell expressed his deep appreciation for the occasion.

CALENDAR

• April 5-7—Texas Cotton Ginners' Association annual convention, State Fair of Texas grounds, Dallas. Edward H. Bush, executive vice-president, P. O. Box 7665, Dallas.

• April 6-7 — Valley Oilseed Processors' annual convention, Buena Vista Hotel, Biloxi, Miss. C. E. Garner, 416 Exchange Building, Memphis, secretary.

• April 17-18—Oklahoma State Cotton Exchange convention. Lake Texoma Lodge. For information write Mrs. M. Rascoe, secretary-treasurer, 244 American National Building, Oklahoma City 2.

• April 21-22 — National Cotton Compress and Cotton Warehouse Association, annual meeting at the Galvez Hotel, Galveston, Texas; an equipment show will be held at the Moody Center at Galveston,. For information write John H. Todd, executive vice-president, P. O. Box 23, Memphis 1.

• May 4-5 — Short Course of Oil Mill Operators. Texas A&M College, College Station. Sponsored by College, International Oil Mill Superintendents' Association and Texas Cottonseed Crushers' Association.

• May 4-5—American Cotton Congress. Waco, Texas. For information, write Burris C. Jackson, chairman, Statewide Cotton Committee of Texas, Hillsboro.

• May 10-11-12 — National Cottonseed Products Association annual convention. Mark Hopkins and Fairmount Hotels, San Francisco. John F. Moloney, 43 North Cleveland, Memphis, secretary-treasurer.

• June 7-9 — Tri-States Oil Mill Superintendents' Association annual convention. Buena Vista Hotel, Biloxi, Miss. B. C. Lundy and Woodson Campbell co-chairmen.

• June 8-9 — Texas Cottonseed Crushers' Association annual convention. Shamrock Hotel, Houston. Jack Whetstone, 624 Wilson Building, Dallas, secretary-treasurer.

• June 14-16—Southeastern Cottonseed Crushers' Association meeting. The Castle in the Clouds, Lookout Mountain, Tenn. For information write, C. M. Scales, secretary, 318 Grand Theatre Building, Atlanta 3.

• June 17-19 — Southwestern Peanut Shellers' Association convention. Baker Hotel, Mineral Wells, Texas. John Haskins, Durant, Okla., secretary-treasurer.

• June 21-23 — International Oil Mill Superintendents' Association annual convention. Galvez Hotel, Galveston, Texas. H. E. Wilson, secretary-treasurer, P. O. Box 1180, Wharton, Texas.

• June 21-23—North Carolina Cottonseed Crushers' Association and South Carolina Cotton Seed Crushers' Association joint annual convention. Hotel Fort Sumter, Charleston, S.C. For information, write Mrs. Durrett L. Williams, P. O. Box 514, Columbia, S.C.

• June 24-26 — Mississippi Cottonseed Crushers' Association annual convention. Buena Vista Hotel, Biloxi, Miss. Gordon W. Marks, P. O. Box 1757, Jackson, Miss., secretary-treasurer.

• June 25-26—New Mexico Cotton Ginners' Association annual convention. Navajo Lodge, Ruidoso, N.M. Winston Lovelace, Pecos Valley Cotton Oil Mill, Loving, secretary-treasurer.

• Sept. 28-30—American Oil Chemists' Society fall meeting. Statler Hilton Hotel, Los Angeles. Lucy R. Hawkins, 35 E. Wacker Drive, Chicago, secretary.

Weevil Research Stressed

Boll weevil control research was ranked high on the list of needed cotton projects by USDA's Cotton and Cottonseed Advisory Committee at its recent meeting. Other needs listed included cotton quality measurement in loan programs, quick protein evaluation of cottonseed, improved wash-wear cottons, oil color improvement.

Dean C. C. Murray of the University of Georgia was re-elected committee chairman, and Harry S. Baker, Producers Cotton Oil Co., renamed vice-chairman.

India Permits Cake Exports

India has granted an export quota of three tons of sesame seed for each ton of oil exported, USDA reports; and also is allowing peanut oil exporters to ship peanut cake abroad.

More Peanuts for Mexico

Mexico expects to plant a record 148,000 acres in peanuts during 1959, indicating production of 77,000 tons. Last year's crop was 66,000, USDA says.

• High Plains Drilling More New Wells

IRRIGATION WELL DRILLING on the Texas High Plains is above the 1958 pace, but well below other recent years, the Lubbock Avalanche-Journal reports.

High Plains Underground Water District officials report that 349 wells, including new wells and a number of replacements, have been drilled in the organization's 13-county area during the last three months.

That's more than a third of all the wells that were drilled during 1958, when drilling activity dropped to the lowest point in years—897 wells.

Water district officials anticipate that drilling activity this year will be somewhat comparable to 1957 and 1956, when 2,319 and 2,170 wells were drilled, respectively.

The biggest drilling activity in recent years came in the drouth year of 1955, when a total of 3,998 wells were drilled. Another large number of wells, 2,933, were drilled in 1954.

Increased drilling activity this year over 1958 is attributed largely to continuing dry weather and to the fact that farmers made more money last season and can better afford improvements.

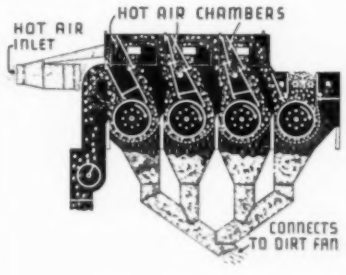
The relatively low number of wells drilled last year, water district officials say, was due to the poor crops of 1957 and heavy precipitation early in 1958.

Water district officials have no information on how much additional land the recently drilled wells will put under irrigation.

Most of the wells, however, are probably being drilled to overcome the diminishing output of old wells and to maintain a good supply of water for land already under irrigation.

The High Plains area at present has approximately 42,000 irrigation wells that water roughly 4,500,000 acres of crop land.

■ J. W. (JACK) NUTT CO., brokers in Little Rock, have a new address — 3606 Lochridge Drive, North Little Rock.



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Today's housewife enjoys cooking — especially when it's done by the chef at one of the better resturants.

• • •

A colored man was summoned before the insurance commissioner. "Don't you know," said the commissioner, "that you can't sell life insurance without a state license?"

"Boss," said he, "you suah said a moufful, I knowed I couldn't sell it, but I didn't know the reason why."

• • •

Investigations prove men are better at solving problems — but only after the women create them.

• • •

Rufus was proudly sporting a new shirt when a friend asked, "How many yards do it take to make a shirt like dat, Rufus?"

"Well, suh, ah got two shirts like this out'n one yard over on F Street."

• • •

Five-year-old Eddie had always wanted a sister. Recently his eldest brother brought home a wife. "Now you have a sister, Eddie," his mother said. "I want a real sister," he replied, "not an outlaw."

• • •

"How come you beautiful redheads marry men who are feeble, bald, nervous and weak?"

"We don't. They get that way."

• • •

"You said the colors in this bathing suit were fast," stormed the angry lady to the department store salesman. "Why, they've run all over my back. As soon as I went into the water, they came out!"

"Those are fast colors, madam," the salesman insisted. "You'll see, when you try getting them off your back."

• • •

A Texan had a small farm with just a few sheep. One day his wife while dyeing some bedspreads blue had a little lamb fall into the bucket of dye. A passing motorist saw the lamb with the blue fleece and bought it for $50. So the Texan figured he had a good thing going and colored more lambs which brought big profits.

"Pretty soon," he recalled, "I was coloring them pink, blue yellow, green, lavender and you know—now I'm the biggest lamb dyer in Texas."

• • •

A high school boy, on a trip to Washington with his graduating class, tried to mail a letter in a fire-alarm box. When the firemen arrived, sirens wailing, he was still standing on the corner, holding the letter. After a lecture, firemen mailed the letter for him.

"Wow!" the boy later exclaimed to his pals, "does this city ever have a cra-a-zy postal service!"

• • •

Quoted here, exactly as it appeared in a San Luis Valley, California, newspaper, is a little item that got us to thinking: "Always cut roses with a sharp knife or sharp garden scissors to avoid injuring the bust."

Such advice requires some thought—whether we understand it or not.

• • •

What a shame our teen-agers have to go overboard for this rock-and-roll nonsense — instead of turning to something sedate and dignified like the Charleston or the Bunny Hug.

What a Combination

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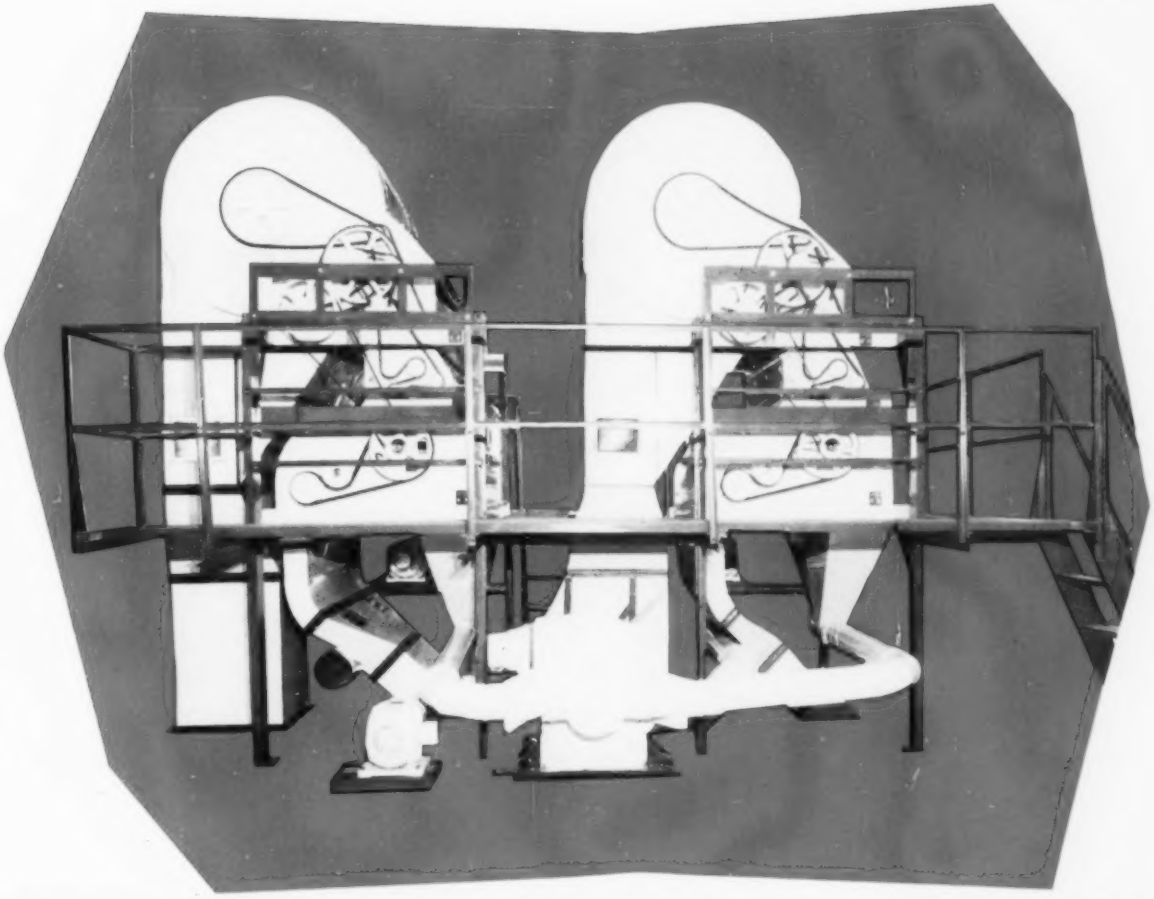

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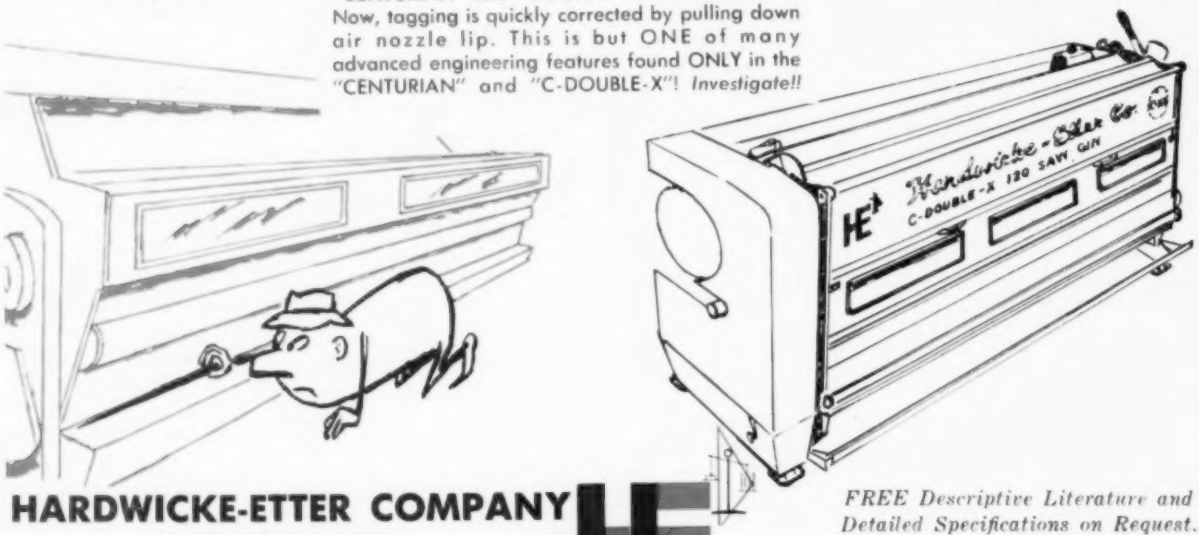

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